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

"Pearls" of Veterinary Medicine

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Idoxuridine for FHV-1

Dose: In United States, can be obtained from compounding pharmacists only; the following forms recommended (do not administer systemically) **Compounded form:** 1 drop of 0.1% ophthalmic solution to affected eye at least 5 times daily. **Compounded form:** 1/4-inch strip of 0.5% ophthalmic ointment to affected eye at least 5 times daily. Idoxuridine is a thymidine analog with in vitro efficacy against FHV-1. It was commercially available as an ophthalmic solution or ointment for humans with disease attributable to herpes simplex virus type 1 (HSV-1), is well tolerated by most cats, and seems efficacious in many; however, no controlled studies assessing its use in cats have been conducted.

David J. Maggs, BVSC, (Hons), Dip ACVO
Plumb's Ther Brf, 2:1

Benefit of ACE-I in heart disease

In studies of enalapril in NYHA phase III and IV heart disease (moderate to severe heart failure), due to MR and DCM, there was actually a lower incidence of azotemia in the enalapril-treated group than the placebo-treated group. Furthermore, in an ongoing study of enalapril's role in the delay or prevention of heart failure due to naturally-occurring MR, interim analysis showed that enalapril at the standard dosage of 0.5 mg/kg, daily had no effect on serum creatinine concentrations, as compared to placebo. In fact, evidence is building to prove ***benefit when ACE-I are administered chronically to both human and veterinary patients*** with naturally-occurring and experimental renal failure. Enalapril has recently been shown to reduce urine protein loss and reduce blood pressure in naturally-occurring canine glomerulonephritis. Likewise, benazepril reduced azotemia and proteinuria in a short-term study of experimental and naturally-occurring renal insufficiency in cats and lowered BUN and creatinine concentrations and blood pressure in cats with polycystic kidney disease. ACE-I have the potential to produce symptomatic hypotension and is typically observed when ACE-I are used in conjunction with other off-loading therapies, such as vasodilators, diuretics, and sodium restriction. Hypotension is reversed by altering drug therapies but may be problematic in producing azotemia, inappetence, weakness, lassitude, and precipitating digitalis intoxication by reducing renal elimination.

Clarke Atkins, DVM, Dip ACVIM
100th WI VMA Conf

Valuable Information Inside

Treat pyodermas like pyoderma

When you have a first-time bacterial pyoderma in a young dog, treat it as a pyoderma-don't assume that the dog is allergic and add steroids. Some dog with pyoderma are pruritic, while others are not. Allergy should be considered once the pyoderma has been properly treated and if pruritus remains. *Properly treated* means antibiotics were administered until total clearing of the lesions, plus an additional week, as well as weekly antibacterial bathing. Some dogs are so corticosteroid-sensitive that even a tiny dose will negate the effect of the antibiotic. If you need to prescribe something for the pruritus, either use an antihistamine, topical water-based corticosteroid conditioner (nothing stronger than a 1% preparation—and some owners overuse even this) or more frequent bathing. Also, when using cefpodoxime or amoxicillin-clavulanic acid for pyoderma, both medications tend to work best at the high end of the dosage range (10 mg/kg, once a day for cefpodoxime; 13.75 mg/kg, TID for amoxicillin-clavulanic acid). When using cephalexin, remember that it can take 21 days for optimal doses to get into the circulation feeding the skin, and to treat the patient until the lesions are gone, plus an additional week past clearing. This should be explained to owners.

Alice M. Jeromin, RPh, DVM, Dip ACVD
DVM News Mag, 46:6

Reducing fear in cats

**If there is one tip that you take away from this presentation, it should be pre-hospital oral administration of gabapentin to reduce fear in cats and facilitate examination, blood draws and smoother transition

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to traditional premedication and anesthesia.** When possible, at home administration of sedative, analgesic, or anti-anxiety medications can reduce the stress of travel, and decrease the cat's wind-up upon arrival at the hospital. With the following protocols, the goal is to reduce stress; do not expect overt sedation. The protocol follows. *Gabapentin (100 mg per cat or 150 mg if big cat, PO, 2-3 hours before travel/arrival). Sprinkle the gabapentin powder on 1 tablespoon wet food and add flavor enhancer (e.g., FortiFlora). The author does not have reservations about having a feline patient eat such a small amount of wet food prior to an anesthetic event. This dose (~20+ mg/kg) is higher than the analgesic dose of gabapentin in cats (gabapentin for analgesia in cats - 5-10 mg/kg or 25-50 mg per cat, PO, BID). *The use of pre-hospital gabapentin has been the single ***most effective tool for reducing fear and anxiety in cats*** that the author and many clinicians have used. That said, cats being cats, it doesn't work in every cat but it does work in most cats. *Expect that cats will be ataxic and slow but not overtly sedate on this dose of gabapentin. Prepare owners for this!! Also know that the effect lingers for many hours and may contribute to woozy behavior after the cat has returned home. *Do not allow cats on sedative doses of gabapentin access to stairs or surfaces that inspire jumping due to risk of falling. Owners should be made aware of this risk. *Gabapentin also has an analgesic effect in cats, and reducing pain may be one of the ways it helps reduce fear.

Heidi L. Shafford, DVM, PhD, Dip ACVAA
N Amer Vet Conf, 01:14

Grain-free diets

Myth: Grain-free diets are healthier for pets **Reality:** Grains are important sources of nutrients such as fiber, fatty acids, vitamins, minerals, and amino acids. While grains can be difficult to digest when uncooked, properly cooked grains are highly digestible. Foods advertised as "grain-free" still contain carbohydrates and many times in higher levels than foods containing grains, substituting ingredients such as potatoes and tapioca for grains. While allergies to grains can develop, less than 1% of dogs are sensitive to grains, and allergies to animal-based proteins are more common. For this reason, a grain-free diet is not a good choice for a food elimination trial if food allergies are suspected. **Key point:** There is no inherent benefit to a grain free diet in pets and grains contain many beneficial nutrients.

Melinda A. Wood, DVM, MS, Dip ACVIM
So Cal VMA Pulse, 59:8

Grapes/raisins toxicity

There have been numerous well-documented reports of dogs developing polyuric/oliguric/anuric renal failure within 72 hours of ingesting grapes and raisins, usually in large quantities. The mechanism of action and toxic principle are unknown. Grapes and raisins have come from various sources. Analysis of grapes and raisins involved in some of these cases have tested negative for heavy metals, pesticides, and known mycotoxins. Histopathologic examination has shown proximal renal tubular degeneration or necrosis with the basement membrane remaining intact. The distal convoluted tubules are usually less frequently and less severely affected. The lowest documented grape dose leading to renal failure is ***0.7 oz/kg*** and the lowest documented raisin dose leading to renal failure is ***0.11 oz/kg***. Vomiting usually begins within 6 hours of ingesting the grapes/raisins. BUN and creatinine begin to elevate in 12-18 hours. Dogs developing severe oliguria or anuria generally were poorly responsive to attempts to increase urine production (mixed results with peritoneal and hemodialysis). Decontamination includes emesis, if recent ingestion. One dose of activated charcoal and intravenous fluids (2x maint). If renal values are normal at 48 hours, the animal can be weaned off fluids and sent home. Symptomatic care for vomiting, diarrhea, or other signs may be required.

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

Leashes and behavior

Leashes are generally safe unless misused by jerking or using to strike the pet. A leash is only as effective as the handler in charge. In general, a leash is a great tool to keep a dog from entering into a situation where it will misbehave *IF* the owners remember that they control the length of the leash and the proximity to the situation. **Exception:** Flexible length/retractable leads. Use with caution. Flexible length leashes do not allow adequate control or clear direction from handler to pet. They ***have little/no place in managing dogs with behavior problems,*** and may be a factor in the development of behavior problems.

Margaret M. Duxbury, DVM, Dip ACVB
124th SD VMA Conf

Associating perianal pruritus with atopy

This study confirmed what have been anecdotal reports that perianal pruritus (PP) is mostly associated with allergy, especially canine atopic dermatitis (CAD). CAD commonly affects the front feet and ear pinnae, while the ear margins and dorsolumbar skin are normally spared. The perianal site is not included as a predisposed area for CAD but, based on this study, perhaps it should be. It is not uncommon for this author's practice dermatology department to see PP patients that have their anal glands removed without any improvement in clinical signs. Most of these dogs have allergy. Anal gland involvement should be assessed in all cases of PP with palpation of the gland and cytology of the exudate, but glands should not be removed if these findings are normal without first investigating a possible allergic cause of the clinical signs.

Sue Paterson, MA, VetMB, DVD, Dip ECVD, MRCVS
NAVC Clin Brf, 12:11

Achieving a healthy weight in cats

One factor that is important to consider, both in the development of and treatment of obesity, is the role of CHO in diet - not because CHO themselves are directly associated with fat (although excess carbs are stored as fat), but because of the effect on protein levels in the diet. Because of the metabolic requirement for cats to utilize protein as an energy source, diets with modest amounts of protein (with an average digestibility) will result in lower muscle mass, and resulting reductions in metabolism. In addition, studies have shown that the higher the concentration of CHO in the diet, the lower the intake of protein, resulting in a lower than needed intake of protein for maintenance and energy. Traditional weight loss plans include feeding an energy restricted (e.g. low fat, high CHO, high fiber) diet. However, while these diets may result in weight loss, they do so to the detriment of lean body mass. Successful weight loss requires loss of adipose tissue as well as maintenance of lean body mass, as lean body mass is the driver of basal energy metabolism (loss of lean body mass is a major contributor to weight regain as appetite is not reduced and satiety not reached). Several studies have evaluated use of a high protein, low CHO diet (protein = 45%) for weight loss in cats, and in those studies, all cats lost weight, but maintained lean body mass. Importantly, high protein, low carbohydrate canned diets not only result in sustained weight loss in these cats, but also in normalization of appetite (reduced urge to eat constantly because they are satiated, and more likely to be satiated when using canned food versus dry food with fiber). Because dry foods must be extruded, CHO are required in the cooking process, and thus, it is difficult to achieve a very low CHO diet that is dry. Further, many of the available high protein, low CHO dry foods are NOT low calorie, so it is extremely easy to feed too much. The best commercial diets for achieving a high protein, low CHO profile, along with controlled calories, are canned (both kitten and many adult foods are acceptable) foods.

Debra L. Zoran, DVM, PhD, Dip ACVIM
Gulf Atl Vet Conf, 10:13

Using the right words

A client brings her senior dog to your clinic for a preventive care checkup. The technician discusses the need to perform a senior preventive screen. When the client agrees, the technician explains that "***she will take your pet in the back***." Poor choice of words. The latter phrase may cause the client to worry about what will happen behind closed doors. A better way is to say "I'm going to take your pet to the treatment area where a technician will collect blood and urine samples."

Wendy S. Meyers
Vet Pract News, Dec 2015

Morphine myths

Morphine cannot be used in cats due to CNS excitement, aka morphine mania. This is false. Morphine is commonly used in cats without producing morphine mania. Morphine mania was termed when CNS excitement was noted after doses of 5-20 mg/kg, SQ, which are at least 20 times higher than the clinically recommended dose. High doses or rapid administration to any species can result in CNS excitement and even seizures. **Morphine is slowly metabolized and eliminated in cats.** This is false. The pharmacokinetics of morphine in cats demonstrate it is rapidly metabolized and has a short elimination half-life (just over an hour). The myth came about because cats are deficient in some glucuronide conjugations enzymes which metabolize morphine in most species. However cats rapidly metabolize morphine through a different pathway, sulfate conjugation and as a result morphine has a short half-life in cats. **Morphine cannot be administered IV to dogs due to histamine release and severe hypotension.** This myth is false. Morphine can be administered IV to dogs, resulting in some histamine release, but hypotension does not occur at clinically relevant doses. The high end of clinically relevant IV morphine doses are 0.5 mg/kg as a bolus. Higher doses can cause more profound histamine release, but marked hypotension does not occur until around 3 mg/kg, IV bolus in dogs. However the effect of IV morphine on histamine release and cardiovascular status have not been investigated in dogs with mast cell tumors. Other IV opioids may be better choices for dogs with mast cell tumors until further data are available.

Butch KuKanich, DVM, PhD, Dip ACVCP
CVC Kansa City, 08:15

Determining which diabetic cats go into remission

When faced with a new diabetic, this author tries to decide if the cat is a likely candidate for remission, as this substantially impacts the initial approach. Remission is most likely to occur within the first 90 days of diagnosis; this is a precious window of time and should be used wisely. If remission is unlikely or a client is not interested /able/willing to head in this direction, the treatment plan is less intense. For those patients, the author's goals are to simply mitigate the clinical signs of DM with minimal risk of hypoglycemia. The ideal candidate for achieving remission is an obese, sedentary cat, on a high carbohydrate diet, who recently received a long-acting steroid injection! This cat has reversible reasons for insulin resistance, and (as long as this cat does not need long-term steroid therapy) is very likely to go into remission with rapid control of BG, effective weight management, and the introduction of a more appropriate diet. Poor candidates for remission include cats requiring systemic glucocorticoids to manage chronic diseases such as IBD or asthma. Patients with any chronic disease are generally poor candidates, as the stress of battling heart disease or chronic kidney disease impacts insulin responsiveness. Patients with a history suggesting chronic pancreatitis are also unlikely to achieve a sustained remission, although the DM may come and go based on the level of pancreatic inflammation (which impacts insulin responsiveness and beta cell

function). Dietary influences play a huge role in achieving remission, so a cat with substantial dietary restrictions may not be a good candidate.

Audrey Cook, BVM&S, MRCVS, Dip ACVIM-SAIM
Am Ass'n Fel Pract Conf, 09:14

Using cyclosporine

Major advantages include the lack of steroid-related side-effects such as polyuria, polydipsia, weight gain, muscle weakness and personality changes. The drug is not fast acting and may take 4-6 weeks for efficacy to be seen, so may be combined with low dose corticosteroids for the first 2-3 weeks. All infection and parasites should be resolved/ruled-out before starting cyclosporine therapy to maximize efficacy. Gastrointestinal side effects occur in approximately 15%-25 % of cases, but are usually self-limiting and can be minimized by slowly building up to the full dose over 10-14 days, pre-treating with an antiemetic 2 hours before cyclosporine for the first 10 days, and/or giving medication with a small amount of food. ***Freezing the capsules*** also helps in some cases anecdotally and does not seem to reduce efficacy.

Helen T. Power, DVM, Dip ACVD
60th HI VMA Conf

Post-pancreatitis diet

Assuming the dog recovers from acute pancreatitis (AP) and is sent home, a fat-restricted diet is a good idea as a transition from hospitalization to the previous diet. Snacks, treats, and human foods should be prohibited during recovery, as the risk is too high of relapse. A common practice is to prescribe 1-2 weeks worth of a low-fat, highly digestible diet with instructions to gradually mix in the previous dog food over 3-7 days. If the dog cannot tolerate the previous diet, then the low-fat diet can be continued for a longer period of time (or even months to years), again with instructions to avoid human foods. If the fat content of the previous diet is known, then it may be possible to find an OTC or veterinary diet that is lower in fat but higher than the diet used in the hospital. For example, if the previous diet had 35% ME fat, and the dog successfully ate 15% fat ME during recovery, then a diet with 25% fat may be acceptable. If the dog has another condition such as obesity or hyperlipidemia, then a low-fat diet may be the only option to manage AP and a second disorder.

Craig Datz, DVM, MS, Dip ABVP, Dip ACVN
Gulf Atl Vet Conf, 09:14

Itraconazole dosing of small animals

Itraconazole is available in 100 mg capsules and 10 mg/ml liquid. Drug absorption is best when combined with food and is enhanced in an acid environment or in the presence of fat. It is also tolerated in cats in contrast to ketoconazole which should not be used. This drug may be used as a once a day regimen for the treatment of cutaneous Malassezia at 5 mg/kg or used in a pulse therapy approach 3 days per week. Dosing smaller animals is easier with the liquid formulation. Several alternatives have been used to implement a more precise dosage. The capsule may be emptied and the granules mixed with an empirical amount of softened butter (e.g., 2 tablespoons). The mixture is then placed on some wax paper and formed into a narrow linear mound of a predetermined length. The paper is then placed in the freezer to harden and individual doses are produced by cutting the ridge of butter at a specified length dependent upon the amount required and the length of the ridge. Although itraconazole is available as a commercial suspension it may be compounded using the capsules. To make 15 ml of 40 mg/ml, place the contents of 6 capsules in a glass mortar and soften the beads with a small amount of 95% ethanol (approx. 1.5 ml). Allow the alcohol to almost dry and then proceed to grind the beads into a fine powder. Add 5 ml of Ora Plus, an oral suspending vehicle (Paddock Labs:763-546-4676), to make a paste and then add 10 ml of Ora Sweet, an oral syrup vehicle (Paddock Labs). The suspension will be stable for 35 days when refrigerated in an amber bottle. Shake well before pouring.

J.W. MacDonald, Med, DVM, Dip ACVD
Gulf-Atl Vet Conf, 10:13

Treatment of the healthy ketoacidotic patient

In some patients with mild DKA clinical signs are mild or absent and metabolic acidosis is mild. In these cases aggressive therapy is not necessary, however ***regular rather than long acting insulin*** should be administered because of its increased potency. Insulin should be administered SQ q 8 hours with a meal (1/3 caloric requirements) until ketonuria resolves. At this point longer acting insulin treatment can be initiated.

Catharine Scott-Moncrieff, VET MB, MA, MS, Dip ACVIM
Am Ass'n Fel Pract Conf, 09:14

Anesthetic concerns in the geriatric

Bradycardia can be a significant concern with geriatric patients. Depth of anesthesia should be assessed and reduced if possible. Anticholinergics are often needed due to geriatrics high vagal tone. However anticholinergics will increase the cardiac workload and geriatrics have an increased sensitivity to them so they should be used judiciously. Bradycardia due to hypothermia is life threatening and the only treatment is active warming. At <91° F, cardiac arrest is a concern and anticholinergics will not be effective. If given repeatedly at these temperatures, anticholinergics ***will sit in the tissues until warming then cause severe tachycardia***. Dysphoria should never be assumed in the geriatric patient until pain has been ruled out. If dysphoria is confirmed, very low doses of acepromazine (0.01-0.04 mg/kg) can be titrated to effect up to a maximum of 1 mg total. A micro-mini dose of dexmedetomidine (0.5-1 µ/kg, IV) is another option.

Courtney Baetge, DVM, DACVA
West Vet Conf, 02:14