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"Pearls" of Veterinary Medicine

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AT A GLANCE

Fallacy of diets on dental disease

There is a tremendous amount of misinformation regarding the effect of diet on periodontal disease. The classic belief is that dental tartar equates to the level of dental disease. This is not true. Tartar, while a sign of periodontal disease, is not the cause. It should be removed, but eliminating tartar can't be solely relied upon for periodontal disease control. The misconception that "tartar equals disease" has resulted in the fallacy that standard dry foods are good for pets' teeth. In actuality, standard dry diets are no more effective for periodontal disease control than canned or soft diets are.

Brook Niemiec, DVM, DACVD, DEVDC, FAVD
NAVC Clin Brf, 14:2

Fluids for the parvo patient

Crystalloids are the best choice in these patients. This author recommends fluid boluses of 30 ml/ kg. The pattern: administer the bolus, reassess the patient, repeat the bolus, reassess the patient... You get the picture. A trick for boluses in puppies is to administer them as quickly as possible—don't use a fluid pump that delivers over 20-30 minutes. Boluses should be complete within 10 minutes to replenish volume and treat shock. Good news: The author says many traditional parvovirus measures aren't vital, which can ***save your clients money***. For example, these puppies don't need plasma transfusions or antiviral or recombinant therapies that are expensive and not proven to make a difference. If there's no evidence of bleeding, coagulation testing is also unnecessary. The mainstays of therapy (providing fluids and nutrition, measuring electrolyte concentrations daily and performing a blood smear) give you the tools to treat and diagnose the most significant aspects of this process.

Medora Pashmakova, DVM, DACVECC
DVM News Mag, Sep 2017

Outpatient treatment of parvo cases

In the most severely affected canine parvovirus enteritis patients. Hospitalization is ideal so that therapy can be tailored and patients closely monitored. However, the financial commitment required for these cases makes lower-cost inpatient or outpatient alternatives desirable for owners who cannot afford hospitalization; these alternatives can also help avoid euthanasia. This prospective evaluation explored the hypothesis that a simulated, outpatient treatment protocol would be comparable to a traditional, inpatient, intensive-care protocol in dogs with parvovirus enteritis. Dogs (n = 40) were treated in-hospital, received IV fluids and dextrose as needed during initial resuscitation, and were given nutritional support and maropitant during the continued-care phase. The inpatient group (n = 20) received continuous IV fluid support supplemented with potassium and IV cefoxitin. The outpatient treatment protocol group (n = 20) received SQ fluids q6h and a single SQ cefovecin injection. Blood glucose and potassium levels were monitored and deficiencies supplemented as needed; these treatments were given IV to the inpatient group versus buccally/orally in the outpatient protocol group. Although the small sample size limits interpretation of results, this pilot study was encouraging. Results suggested that ***patients may be successfully treated as outpatients*** at a lower cost. There were greater metabolic disturbances that required intervention in the outpatient treatment protocol group, indicating these patients may require daily veterinary visits and re-evaluation.

E.C. Venn et al.
NAVC Clin Brf, Sep 2017

Spontaneous femoral fracture

Spontaneous femoral fracture that seems to occur in young adult cats—over 1 year old, with an average of

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almost 2 years. These fractures occur with no trauma and can be bilateral (in one-third of cats in this sample). They most often happen in heavy males neutered before 6 months old. After the fracture, the femoral neck is subject to lysis, leading to a typical "apple core" lesion. The severity of femoral neck osteolysis increases with the duration of the injury. It's assumed that this occurs because the growth plates are not fully closed at the time of sterilization. This is likely due to hormonal influence, causing delayed physeal closure. The author concludes by saying ***young, big cats suffering from hip pain may have a hip fracture***.

Phil Zeltzman, DVM, DACVS, CVJ
Vet Pract News, 28:7

Pimobendan use in the cat

Although cardiologists generally agree on the utility of pimobendan in dogs with heart disease, there is less consensus about use of pimobendan in cats. The most common cause of CHF in cats is hypertrophic cardiomyopathy (HCM). In this disease, myocardial relaxation (diastolic function) is impaired, but systolic function (contractility) is generally normal or even hyperdynamic. Thus, positive inotropes are theoretically counterintuitive in HCM and may seem contraindicated in cats with outflow tract obstruction (hypertrophic obstructive cardiomyopathy, HOCM). However, there are also theoretical benefits to pimobendan in HCM. Pimobendan's adjunctive anti-cytokine effects may improve appetite and attitude. Several retrospective studies of cats with CHF and LV systolic dysfunction have shown that pimobendan is well tolerated in cats. Recently, a retrospective case control study of 54 cats with CHF and normal systolic function (i.e., "typical" HCM) demonstrated a significant survival benefit of pimobendan. On the basis of published evidence and clinical experience, this author gives pimobendan as a first-line treatment to every cat diagnosed with CHF, regardless of underlying disease, systolic function, or presence of outflow tract obstruction. The typical dose for pimobendan in cats is the same as dogs (label dose of 0.2-0.3 mg/kg, PO, q12h), which in most average-sized cats equates to 1.25 mg per cat PO, q12h.

Jessica Ward, DVM, DACVIM
ACVIM Conf, Jun 2017

Diet and atopic dermatitis

Three studies have demonstrated that commercial novel limited ingredient diets frequently contain traces of ingredients that are not listed on the label. Whether or not such contamination would induce flares in dogs with food-induced atopic dermatitis (AD) is not known. If the history suggests an inappropriate diet selection for the first trial then repeating a second elimination diet is indicated. Two thirds of dogs with concurrent AD and food allergies exhibit perianal pruritus, so if a patient exhibits perianal pruritus and/or associated gastrointestinal signs as a component of the flare then a food trial is indicated. It is speculated that the presence of storage mites in dry dog foods might cause some relapses of AD because of their allergenic cross-reactivity with house dust. However, there is currently no evidence suggesting that avoiding dry commercial dog foods is beneficial in dogs allergic to storage and/or house dust mites. Freezing dry dog foods might reduce contamination with storage mites, but the impact of such freezing on the clinical signs of mite-allergic dogs is unknown. Nevertheless, to decrease excessive storage mite contamination, owners should be encouraged to avoid storing dry dog foods in humid and warm areas, and they should be advised to store foods in clean and sealed containers.

Amanda Burrows, FANZCVS
4th Derm For, 10:16

Handling issues

Allow adequate time for animals with handling issues; perhaps schedule a double appointment. Canine or feline pheromones in collars, sprays, or diffusers can be helpful. In advance of a visit, stressed animals can be given medications such as gabapentin, diazepam, or trazodone. Sedation is an option for seriously stressed patients. Benzodiazepines can be very useful because of their anxiolytic as well as anterograde amnesic effects. If an animal does have a bad experience at the veterinary clinic, we should think about ***using benzo (diazepines) to block their memory***, so it's not so hard for them at their next visit.

Dr. Kersti Seksel
JAVMA, Oct 1, 2017

Cannabidiol for pain

Cannabidiol (CBD) has been receiving increasing attention for its use in the treatment of pain in veterinary medicine. Unlike marijuana, which is a class 1 substance that contains varying levels of its active ingredient tetrahydrocannabinol (THC), cannabidiol is an extract of the hemp plant that has THC levels lower than 0.3 percent. Practitioners who want to recommend or dispense CBD must do so based on information from anecdotal evidence—one of the worst types of evidence to rely on. As a pain practitioner, this author carefully considers utilizing treatments with little or no research behind them as long as there doesn't seem to be reports of serious adverse events. The author has encouraged many of his clients to use CBD to treat the pain of degenerative joint disease and other chronic conditions in their pets. The results have been mixed—but that's true of proven treatments such as nonsteroidal antiinflammatory therapy also. There are many untrusted forms of the drug. An exception may be a product being produced for Peak Performance Veterinary Group in Colorado. It has a CBD concentration of 100 mg/ ml in a coconut oil base and has been tested for purity and contaminants. Current recommendations for oral dosing of CBD in dogs and cats are 0.02 mg/kg to 0.1 mg/kg, BID. The DEA considers CBD a marijuana derivative and therefore subject to class 1

scheduling. However, the agency has enforcement only over the cultivation of hemp—not its distribution.

Michael Petty, DVM, CVPR, CVMA, CCRT, CAAPM
DVM News Mag, Sep 2017

Weight loss in cats, L-carnitine

Cats on high protein, low fat, low carbohydrate diets can lose weight and yet maintain lean body mass. Commercial diets are now available from most leading pet food manufacturers with high protein/low carbohydrate formulations (ideally >45% protein and <10% carbohydrate ME) designed for weight management. It is important for pet owners to understand that ***regular maintenance cat foods should not be used for weight loss***. Commercial weight loss diets have nutrient content adjusted to the caloric density of the food to avoid deficiencies. Canned formulations are less calorically dense and have lower carbohydrate levels than dry formulations. Recent studies have shown that a diet with low energy density due to increased water content reduced weight gain and increased physical activity. Research also supports the use of L-carnitine at 250-500 mg/cat/day to increase lean muscle mass and enhance fat utilization and weight loss.

Susan Little, DVM, DABVP
83rd AAHA Conf

Appetite stimulant for cats with renal disease

The effects of uremia on appetite are well known, particularly in human renal patients. The use of H2 blockers for uremic gastritis can be helpful in encouraging consumption of adequate calories. The use of mirtazapine as an appetite stimulant is helpful in those cats who can tolerate it. This author uses 1/8 of a 15 mg tablet every day to every third day depending upon response to therapy. Many cats with chronic progressive renal disease are underweight and dosing of 1/4 of a tablet as has been recommended is often followed by restlessness, anxiety and vocalizing in cats who are sensitive to it. Clients can be quite upset by this and may be less inclined to follow other treatment recommendations. Both of these forms of therapy imply being able to accomplish giving fragments of a pill to a cat on a regular basis and over a prolonged period of time. Strategies for this should be included in client education including the use of "sticky" high value food like cheese in a can, cream cheese or pill pockets and other soft treats.

Elizabeth Colleran, DVM, MS, DABVP
CVC San Diego, 12:15

Urinary incontinence

Phenylpropanolamine, an a-agonist available for veterinary use in many countries, can be used at 1 mg/kg, PO, q8-12h. Pseudoephedrine can also be used at 1.5 mg/kg, PO, q8-12h. Having the bitch maintain a small bladder during periods of recumbency is helpful. In many animals, the efficacy of both sympathomimetic and estriol medications tends to decrease over time despite increasing dosages, perhaps because of estrogen-receptor desensitization. Because of the multifactorial character of this condition, no single treatment is 100% effective, especially long-term. Recently, the gonadotropin-releasing hormone agonist ***deslorelin*** has shown some efficacy, ***providing full continence*** in ~50% of treated bitches and an improved response to other drugs in ~20% of bitches.

Stephano Romagnoli, DVM, MS, PhD, DECAR
NAVC Clin Brf, 15:1

Catheter placement

Hypotension and pitting edema may place additional hurdles to successfully achieving peripheral vascular access. Avoiding overly aggressive vascular occlusion, proximal to the attempted catheterization site is important when presented with a hypotensive patient. Overly aggressive venous compression may actually compromise desired arterial flow to the distal limb, sabotaging your efforts to promote venodilation. In a patient with pitting edema, gentle, sustained pressure to the designated catheterization site typically suffices to disperse interstitial edema, allowing one to visualize and successfully cannulate the vessel. Replacing catheters at fixed intervals is no longer advised, instead, monitor for signs of inflammation (swelling, pain, redness).

Todd Duffy, DVM, DACVECC
AVMA Conf, 08:16

Chlorhexidine in cat ears

In regards to safety of the chlorhexidine in otic products, a study reported the effects of instilling 0.2% chlorhexidine into the ear canals of dogs with experimentally ruptured tympanic membranes. In this study, 0.2% chlorhexidine was instilled in Greyhounds' ear canals BID for 21 days. At the end of the study there were neither clinical vestibular signs nor BAER changes noted. THIS DOESN'T APPLY TO CATS!!!. A study instilling 0.05% chlorhexidine once every other day for 3 treatments into the middle ear of cats concluded that even this concentration of chlorhexidine may cause hearing loss in a cat. The authors did a subsequent study in which they evaluated vestibular effects of infusing chlorhexidine into the middle ear of cats. That study concluded that exposure of the middle ear to even dilute concentrations of chlorhexidine (0.05%) were likely to cause vestibular disturbances.

Paul B. Bloom, DVM, DACVD, DABVP
Mich Vet Conf, 01:16

Uncontrollable itchy dog

Let's get back to basics. Be sure you are dealing with allergies and not something else. In the uncontrollable itchy the first diagnosis to look for is scabies. These patients may not eat or sleep well because of pruritus and can lose a significant amount of weight. The problem is that diagnosing scabies can be difficult. Only about 50% of dogs with scabies will have positive skin scrapes. Therefore, it is very important to treat for scabies to rule

it out. If using Revolution or Advantage multi or ivermectin, be sure to treat ***every other week for at least 3 treatments***. Remember that for the first one to two weeks the patient may be worse before he gets better. Unlike in the treatment of demodicosis a short course of glucocorticoids can be used to help calm the itching down while you are waiting for the mite therapy to take effect. If the patient is improving with mite therapy then it is also a good idea to decontaminate the environment by using a permethrin flea spray once then again in a month plus washing all bedding in hot water every other week when the pet is treated.

Dawn Logas, DVM, DACVD
N Amer Vet Conf, 01:16

Isoniazid toxicosis

In the present study, seizures and death were reported in dogs that ingested isoniazid at estimated doses as low as 19.8 and 29.4 mg/kg, respectively. Given the severity of clinical signs, high likelihood of seizures, and poor prognosis associated with seizure-like signs, dogs with known or suspected isoniazid ingestion at doses >20 mg/kg or that have substantial clinical signs of toxicosis should be immediately treated with pyridoxine, the antidote, which is necessary for the successful management and treatment of severely affected patients. Pyridoxine can be acquired from human hospitals or pharmacies. For dogs with isoniazid toxicosis, pyridoxine should be diluted to a 5%-10% solution and administered IV over 30-60 minutes at a dose equal to the amount of isoniazid ingested on a gram-per-gram basis or, if the amount of isoniazid ingested is unknown, beginning at a dose of 70 mg/kg. When pyridoxine was not readily available, the use of propofol or isoflurane to induce and maintain anesthesia was anecdotally successful in reducing or resolving isoniazid-induced seizures in some dogs.

Dustin R. Schmid et al.
JAVMA, Sep 15, 2017

Author insights to eye enucleation

Povidone-iodine solutions are used in ophthalmologic procedures to avoid corneal and conjunctival ulcerations. In enucleation, it is important to protect the contralateral eye from surface injury. A preoperative retrobulbar block and eyelid block with a sodium channel blocker may improve intra- and initial perioperative analgesia and decrease the need for initial postoperative rescue analgesia. Removing the inferior lid before the superior lid is recommended, as doing so can prevent (sometimes moderate) hemorrhaging on the second lid incision. ***Ligation of the canine optic nerve is not necessary*** before globe removal. The nerve does not contain a central retinal vein as described in the human literature. If hemorrhage continues after a few minutes of digital pressure, a hemostatic agent (e.g., gelatin sponges) can be placed in the orbit.

Anja Welihozkiy, DVM, DACVO
NAVC Clin Brf, Jul 2017

Allergic skin disease

Anti-inflammatory topicals can be extremely helpful for allergic skin disease. Do not use potent sprays or lotions such as betamethasone intended for treatment of focal areas for more than 2-3 weeks. It is far better and safer to choose a steroid such as low-concentration triamcinolone (Genesis) when treating larger areas of skin. These products are also useful for "***proactive therapy***," a regimen where the skin is sprayed once to twice daily until remission PLUS a week or so. Then, the product is applied to the pet twice weekly, even if the skin is completely normal, to the same areas that were a problem initially. The goal of proactive maintenance therapy is to *prevent* relapses.

Douglas J. DeBoer, DVM, DACVD
SE Vet Conf, 06:16

Appetite stimulant—fish oil

While currently used for chronic inflammatory conditions such as osteoarthritis, neoplasia and cardiovascular disease, the use of fish oil as a means of improving appetite and lean body mass in cachexic and inappetant dogs and cats has not been extensively evaluated. However, in one study, the use of omega-3 fatty acids was associated with reduction in IL-1 concentrations and improved cachexia scores in a group of 28 dogs with heart failure. When taken by people with cancer-associated cachexia in conjunction with appetite stimulants, supplementation with fish oil was shown to decrease circulating IL-6 concentrations, improve lean body mass, and increase food intake more than when either fish oils or appetite stimulants were given alone. Given the current lack of data regarding the concurrent use of omega-3 fatty acids and appetite stimulants in animals, further research in this area is warranted.

Daniel L. Chan, DVM, DEACVECC, DECVECC, DACVN
Int VECCS Conf, 09:15

Phenylpropanolamine use in UTI

Phenylpropanolamine (PPA) is approved for the control of urinary incontinence due to urethral sphincter hypotonus. This drug acts via sympathomimetic agonist activity which results in an increase in urethral sphincter tone and closure of the bladder neck. PPA treatment trial (1.25 mg/kg, PO, q8-12h) should be considered in any individual that has recurrent UTI and clinical evidence of even subtle involuntary urinary incontinence. Promoting enhanced urethral tone helps restore an effective urethral defense mechanism to prevent ascending bacterial translocation. Long-term therapy is generally safe, so if a decreased incidence of UTI results with PPA treatment, then ***continued indefinite use*** should be considered. PPA stimulation of alpha- and beta-adrenergic receptors can result in increased vasoconstriction, heart rate, coronary blood flow, blood pressure, mild CNS stimulation, and decreased nasal congestion and appetite. Oral estrogen replacement therapy can also be considered in younger females that develop recurrent UTI following ovariectomy.

Gary P. Oswald, DVM, DACVIM
ACVIM Conf, Vol 2, Jun 2017