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Hepatic lipidosis

Other therapeutic considerations include antiemetic therapy. Antiemetics often facilitate reintroduction of food. Vomiting can sometimes be reduced by minimizing handling of the cat at the time of feeding and immediately afterwards. Metoclopramide (CRI of 1-2 mg/kg/day or 0.2-0.5 mg/kg, q8h, SQ, 30 minutes before feeding) is often a first choice drug because of availability, low cost and prokinetic effects. It is a weak antiemetic in cats, however, and better control of emesis may be obtained by use of maropitant (1 mg/kg, IV or SQ, q24h), dolasetron (0.5 mg/kg, q24h, IV or SQ) or ondansetron (0.1-0.3 mg/kg, q8-12h, IV). An H2 receptor antagonist is often used to protect the lower esophagus from acid damage and to help alleviate possible gastritis. Evaluation of plasma B12 (cobalamin) concentrations in cats with lipidosis revealed that 40% had subnormal values of cobalamin. Cobalamin deficiency may be severe enough to produce signs such as neck ventroflexion, and anisocoria. The route of choice for supplementation is subcutaneous injection (250 µg/injection, once weekly initially, for 6 weeks).

P. Jane Armstrong, DVM, MS, MBA
Mich Vet Conf Procd, 01:12

Think before using gluten-free

Before you remove the gluten from that diet, you might be interested in hearing what a clinical veterinary nutritionist has to say. To this author, food is a way of delivering calories and nutrients into the animal. As long as the animal does not have a documented food allergy, owners shouldn't worry about whether the food contains corn, wheat or rice–the ingredients themselves are not important–and more about the quality of food overall. "Gluten" is a term for the protein portion of the carbohydrate. True gluten enteropathies, or sensitivities to gliadin and glutenin, are extremely rare in dogs. Gluten-free or no-grain diets, which use primarily simple carbohydrates like tapioca or potato, may not have enough fiber compared to diets that include more complex carbohydrates like oats, barley and brown rice. What the author sees clinically in otherwise healthy dogs that are eating 'gluten-free' or 'no-grain' diets is poor stool quality and increased gassiness. This is often resolved with adding more complex carbohydrate to their diet. While the nutrient requirements are not identical between people and dogs, there are many similarities, and in the author's experience, dogs do better when eating diets with a more even distribution of protein, fat and carbohydrate.

Lisa Weeth, DVM, Dip ACVN
Vet Pract News, 24:9

INSIDE THIS ISSUE

Steroids for pruritus

What steroid you use is a matter of personal preference and experience. For severely itchy dogs, this author prefers to use an intravenous injection of dexamethasone at 0.05-0.1 mg/kg, followed by oral prednisone at 0.5mg/kg, twice daily, for 2-3 days, then one time daily, for 2-3 days, then twice daily for 10-20 days. For moderately itchy dogs the author skips the IV injection. For most patients, punctuated short courses such as this can be implemented several times a season with a month or two off steroids in between. For other patients prolonged courses are required to maintain symptomatic relief. Somewhere between short, punctuated exposure for 10-20 days and prolonged exposure for 10 years is when most patients get into trouble. In order to avoid complications the overall goal is to reduce the total amount of steroids used in a life time of the patient to the lowest achievable level by combining systemic steroid therapy with other strategies that reduce pruritus. The author aims for a total annual prednisone dosage of 30 mg/kg/year.

John C. Angus, DVM, Dip ACVD
DC Acad Vet Med Conf Procd, Apr 2013

Idiopathic pododermatitis

Idiopathic pododermatitis is a catch all for cases that do not seem to fall into any of the more common categories. These dogs have shown some improvement with long courses of antibiotics but may only heal fully with prednisolone (starting dose 1.5-2 mg/kg/day and then tapered down) or cyclosporine (5 mg/kg/day). Most animals need lifelong management with reduced doses

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of prednisolone or cyclosporine. Weight reduction can be very beneficial. Early and aggressive therapy may prevent development of chronic changes and malformation of feet in which case dogs are more difficult to manage.

Andrea Cannon, DVM, Dip ACVD
West Vet Conf Procd, 02:11

Glargine insulin

The acidic glargine solution forms microprecipitates at the physiologic pH of the subcutaneous space, and the release of glargine insulin from these microprecipitates is slow, prolonged, and relatively constant. In human patients, these properties of glargine insulin induce serial blood glucose concentrations that are similar to each other without a distinct nadir. Glargine insulin is therefore described as a peakless insulin and is used in humans. Results of this study suggested that in diabetic dogs fed a diet high in insoluble fiber, glargine insulin is a peakless insulin. There was no significant difference between mean minimum and mean maximum blood glucose concentrations or between any of the blood glucose concentrations measured at other time points. The authors concluded that, in dogs, glargine insulin is a peakless insulin, which results in a relatively flat blood glucose concentration curve. Glargine insulin administered SQ twice daily is an ***effective mode of treatment*** for dogs with naturally occurring diabetes mellitus and may be used as an alternative to other insulin preparations that have been shown to be effective in treatment of diabetes mellitus in dogs. Administration of 0.3 U of glargine insulin/ kg, SQ, twice daily is recommended as a starting dosage, although some dogs will require a gradual increase in dosage for their diabetes to become well regulated.

Rebecka S. Hess, DVM and Kenneth J. Drobatz, DVM
JAVMA, Oct 15, 2013

Cyclosporine for canine atopy

Cyclosporine (CSA) is a calcineurin inhibitor and is recommended at 5 mg/kg/day. Modified generic CSA may be less effective for some dogs. Response is noted within 4 weeks, with maximal response at 8 weeks. In 50% of patients, subsequent frequency reduction provides a similar response. Vomiting and diarrhea is noted in 25% of patients. Anecdotally, ***freezing the capsules*** 1-2 hours pre-administration reduces these side effects. Ketoconazole (2.5-5 mg/kg/day) is used to competitively occupy cytochrome P450 enzymes, allowing for a dose reduction (2.5 mg/kg) in some individuals. Malignant neoplasia and systemic infection are label contraindications. Serum biochemical profile and CBC is recommended prior to initiating therapy. Urine culture every 6-12 months is suggested to assess for occult urinary tract infection. Blood work monitoring is recommended, however requirements are debated, as no specific changes are expected. Tacrolimus is also a calcineurin inhibitor. The 0.1% ointment (Protopic) is effective treatment for focal CAD. Mild irritation can occur and gloves should be worn for application. The ointment is applied 1-2 times daily then as needed to maintain effect.

Jennifer S. Pendergraft DVM, MS, Dip ACVD
AVMA Conv Procd, 08:12

KCS cocktail

This author's cocktail usually is 15 ml saline based artificial tear, 2 ml 20% acetylcysteine, 2 ml 100 mg/ml injectable chloramphenicol or gentamicin, and 2 ml 2% pilocarpine. Culture and sensitivity or cytology will help decide on which antibiotic to use. The use of pilocarpine can be determined by response to treatment (if no dramatic increase in STT values, the pilocarpine is probably of no use, and since it is mildly irritating even at this low concentration, one may choose not to use it). Chronic use of topical antibiotics may cause resistant bacteria to colonize the ocular surfaces, so antibiotic therapy should only be used in the face of clinical infections. This cocktail should be refrigerated, and will be safe for use up to 3 months with gentamicin and up to one month with chloramphenicol. The acetylcysteine dramatically helps remove excessive mucous, and the author has many dogs on chronic cocktail therapy with artificial tears and acetylcysteine alone.

J. Phillip Pickett, DVM, Dip ACVO
VA VMA Conf Procd, 02:11

Herpes-related ocular disease and L-lysine

L-lysine, an oral amino acid dietary supplement, initially was reported to minimize the clinical disease and recurrences of feline herpesvirus infection. However, recent studies have found there is no evidence of benefit of dietary L-lysine supplementation. In fact, L-lysine supplementation may paradoxically increase the severity of disease and viral shedding. Interferons are cytokines produced by cells in response to viral infection and are known to have antiviral activity. Unfortunately, current formulation of topical and oral interferons does not appear to be effective in the treatment of herpesvirus-related ocular disease. Recovery from the viral infection requires recuperation of the immune system and the removal or avoidance of stressful environmental factors. It is imperative to remember over-medication can be a significant source of stress in some cats. Simply ***reducing or stopping the treatment*** may be enough to allow the immune system to suppress the viral reactivation in these cats.

Cindy Mar, DVM, Dip ACVO
So Cal VMA Pulse, Jul 2013

Respiratory signs and cardiac biomarkers

Dogs with respiratory distress should be managed on the basis of the information obtained through history taking, physical examination, and any other

diagnostic testing that can be performed safely. Echocardiography is often helpful in this circumstance as is diagnostic thoracocentesis, if applicable, as well as monitoring of the clinical and radiographic response to trial treatment with diuretics and other cardiac drugs. A plasma NT-proBNP concentration <800 pmol/L in dogs with respiratory signs strongly discounts the possibility of congestive heart failure (CHF) and suggests that noncardiac disease is responsible. In contrast, an NT-proBNP concentration >1,400 pmol/L increases the likelihood that CHF is the cause of clinical signs. Plasma NT-proBNP concentration should be evaluated within the context of other diagnostic findings or comorbidities, such as pulmonary hypertension. In dogs in which CHF or respiratory disease is clearly evident from routine diagnostics, performance of an NT-proBNP assay would be of limited value and might even provide erroneous information. Studies in human emergency departments have shown that measurement of NT-proBNP concentration is most useful in patients for whom results of conventional diagnostic tests are ambiguous and that the information from the NT-proBNP assay can help steer the clinician in one direction or another.

Mark A. Oyama, DVM, Dip ACVIM et al.
JAVMA, Jul 1, 2013

Dogs and kid diseases

Children exposed to dogs seem to have fewer infectious respiratory symptoms and diseases during the first year of life, according to a study published in the journal Pediatrics. Researchers followed up with 397 children from pregnancy onward and recorded the frequency of respiratory symptoms and infections together with information about dog and cat contacts during the first year of life. Children with dogs at home were healthier than children with no dog contacts. Kids exposed to dogs at home had less frequent otitis and tended to need fewer courses of antibiotics than children without such contacts.

Vet Pract News, 24:9

Post-grooming folliculitis

Post-grooming folliculitis is a painful disease of the back that develops within 24 hrs of bathing or other topical therapy. Fever and malaise often accompany this disease, and rapid diagnosis and treatment are required. This pyoderma develops as a result of contamination of shampoos with *Pseudomonas aeruginosa* or other gram negative bacteria. Gram negative bacteria produce endotoxins which are very inflammatory and pyrogenic, activating white blood cells to produce TNFalpha and other proinflammatory cytokines. Endotoxins are one of the major virulence factors associated with Gram-negative bacteria and can cause substantial tissue damage. Dogs with post-grooming folliculitis exhibit pain in the skin of the back as one of their initial signs. They then develop a necrotizing ulcerative dermatosis. Cytology should be done immediately from dogs with this presentation; if gram-negative bacteria are found, material for culture and sensitivity should be submitted and fluoroquinolones should be started immediately along with a NSAID agent to control pain. The author's personal choice for antibiotic therapy in these dogs is marbofloxacin. It is fair to say that this type of gram-negative pyoderma is the only indication for using fluoroquinolones as a first choice for pyoderma.

Valerie A. Fadok, DVM, PhD, Dip ACVD
West Vet Conf Procd, 02:11

Cisapride

The most relevant uses of cisapride in animal patients include treatment of gastroparesis, especially in patients that experience significant side effects from metoclopramide (e.g., hyperactivity and other dystonic reactions) or where metoclopramide is not sufficiently effective, idiopathic constipation, gastroesophageal reflux disease (if H2-receptor antagonists or proton pump inhibitors and dietary management alone are not effective), and postoperative ileus. Cisapride is extremely well tolerated by animal patients. The author has used cisapride in dogs and cats that have experienced neurologic side effects from metoclopramide and has not observed any adverse reactions to cisapride in any of these patients, even in those whose side effects to metoclopramide included very bizarre behavior changes. The suggested dose of cisapride is similar to what has been recommended for metoclopramide (0.1-0.25 mg/lb, PO, SID-TID depending on the clinical situation). In general, animals weighing 10 pounds or less receive 2.5 mg per dose, 11-14 pounds 5 mg per dose, and those over 40 pounds 10 mg per dose. The dose can be gradually increased if necessary. As is recommended for metoclopramide, cisapride should be administered no closer than 30 minutes before feeding.

Todd R. Tams, DVM, Dip ACVIM
Music City Vet Conf Procd, 03:02

Over-diagnosing ringworm

Ringworm is both over-diagnosed and overlooked in practice. Clinicians often rely on clinical signs only and this leads to over diagnosing the condition. The clinical signs most commonly associated with ringworm are circular areas of alopecia and a ring of scale, but most of the time this lesion is NOT ringworm. Dermatophytosis is a follicular disease but so is pyoderma and demodicosis and both occur more frequently than ringworm. Always consider and look for all three common causes of folliculitis. Remember that dermatophytosis can have other clinical presentations that are not as classic making the diagnosis a little more elusive. Overdiagnosis can also be the result of not properly taking or holding a sample, or misreading the growth on a DTM. A red color change and fluffy white growth does NOT au-

tomatically confirm dermatophytosis! To know whether these changes are consistent with ringworm, you must make a tape prep and actually identify the macroconidia microscopically. If you are not doing this, you probably are over-diagnosing ringworm.

Patricia D. White, DVM, MS, Dip ACVD
West Vet Conf Procd 02:11

Sedation for GI contrast study

To prepare the patient, sedation is not desirable and should be avoided because there are few drugs that do not have a side effect on GI transit time. If sedation is a necessity, certain drugs and doses are recommended that have minimal effects on the GI system. Dogs—Acepromazine: 0.025 to 0.2 mg/kg, IV (maximum 3 mg) or 0.1-0.25 mg/kg, IM. Cats—Ketamine: 5 mg/kg and diazepam: 0.2 mg/kg, IV; or ketamine: 2.7 mg/kg and diazepam: 0.09 mg/kg, IM in separate syringes.

Tasha Axam, DVM, dip ACVR
Vet Med, 107:11

Feline eosinophilic plaques

Other than abscesses, pyoderma has been considered uncommon in cats. Lesions such as eosinophilic plaques, eosinophilic ulcers, and miliary crusts are often attributed to allergic skin disease. Though these lesions do occur most commonly in allergic cats, the actual lesion often represents a pyoderma. The pyoderma lesions respond to systemic antimicrobial therapy, though lip lesions are slow to resolve and may require 4-8 weeks of therapy. Antibiotics for treatment include the following. Amoxicillin trihydrate/clavulanate potassium: 62.5 mg/cat <7kg; 125 mg/cat >7kg, PO, q12h (well tolerated, BID dose effects compliance). Cefovecin: 8 mg/kg, SQ, every 14 days (improves compliance, two treatments preferred). Clindamycin HCl: 11-22 mg/kg, PO, q24h (sometimes better in thick scarred lesions). Doxycycline HCl: 10 mg/kg, PO, q24h (make liquid or give water following dose). Marbofloxacin: 2.75-5.5 mg/kg, PO, q24h (preferred fluoroquinolone with lower potential retinal concerns).

Craig E Griffin, DVM, Dip ACVD
West Vet Conf Procd, 02:11

Feline arterial thromboembolism, prevention

Ideally, we would like to use a dose of aspirin that inhibits platelet thromboxane A2 production, but does not inhibit vascular endothelial prostacyclin production. Thromboxane A2 is an endogenous platelet aggregator, whereas prostacyclin inhibits platelet aggregation and causes endothelial vasodilatation. In humans, it is known that a low dose of aspirin (~1-2 mg/kg) will inhibit thromboxane A2 without inhibiting endothelial prostacyclin. Unfortunately, a dose of aspirin that inhibits platelet thromboxane A2 production and spares endothelial prostacyclin production has not been clinically established in cats. Nevertheless, this author uses a similar low aspirin dose (i.e., ~1 mg/kg, PO, q48h). This dose of aspirin must be compounded, but even with a compounding fee, is very inexpensive. Aspirin given at a dose of 81 mg/cat (~25 mg/kg) every 3 days is a very common approach. But there is no evidence that it is superior in the prophylaxis of thromboembolism. Further, this dose is associated with an increase risk of GI side-effects (e.g. vomiting and anorexia) compared to the low dose of aspirin. Clopidogrel (Plavix) – 18.75 mg, PO, q24h is a newer antiplatelet drug that exerts its effects by inhibition of platelet ADP receptors. The author has added this drug to aspirin therapy in cats that have had a recurrence of thrombosis. The combination may be superior to either alone, but there is no evidence of that at this point.

Deborah M. Fine, DVM, MS, Dip ACVIM
AVMA Conv Procd, 08:12

Slow-kill heartworm therapy

It is now known that certain macrolides have adulticidal properties. Ivermectin, when administered for 31 months continuously has ~95% efficacy in alleviating young heartworm infections. It has been shown, however, that lung and pulmonary vascular manifestations of HWD still result when ivermectin “prophylaxis” is begun 5.5 and 6.5 months post-infection and continued for 1 year. Selamectin and moxidectin also appear to have some adulticidal efficacy. Recent data suggests that an aggressive macrolide protocol (ivermectin, given at 6 µg/kg, weekly instead of monthly), coupled with a regimen of doxycycline (10 mg/kg/day) will hasten worm destruction with approximately 9 months of 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
W Vir VMA Conf Procd, 2013