The Cutting Edge of Medicine: An Update from Recent Conferences

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Abstracts from the VECCS Conference, San Antonio, 2010

Complications from treatment of IMHA

Immune suppression is the cornerstone of the treatment of IMHA. Commonly used medications include corticosteroids, azathioprine, and cyclosporine. Side effects can occur because of the medication used or could be from the immune suppression itself. To date there is little data on the incidence of side effects in dogs treated for IMHA. Researchers from Michigan State University carried out a retrospective study to assess the incidence of complications. A total of 57 dogs were included (had to have had IMHA and survived for 1 month) seen between 2004 and 2007. A total of 94% of dogs experienced complications. GI side effects were seen in 51% of patients and included 23% with vomiting, 35% with diarrhea, 12% with hematochezia, and 11% with anorexia. Pancreatitis was suspected in 9% of the dogs. Urinary problems were seen in 49% of patients (28% PU/PD, 26% UTI, 14% inappropriate urination). Dermatologic problems were seen in almost half the dogs as well (alopecia, dry skin, fungal infections, abscess, ear infections, demodex). Some of these are probably directly attributable to the medications (corticosteroids causing skin issues and PU/PD), others such as the GI signs may also be from the primary disorder or stress of hospitalization. Overall complications are common, though few seem to be severe in nature with the exception of pancreatitis.

Backstrom MM, Jutkowitz JA, et al. Complications associated with long-term immunosuppressive therapy in dog with immune-mediated hemolytic anemia. JVECCS, volume 20, supplement 1, page A8.

27th Annual ACVIM Forum, Montreal

Hypertension in hyperthyroid cats

The exact incidence of hypertension in hyperthyroid cats is unknown to date. Certainly some cats with hyperthyroidism do appear to develop clinically significant hypertension. This study from the UK looked at 324 cats presented to a first opinion practice (21 were excluded since they were being treated for hyptension). Hypertension was considered a BP greater than 170 mmHg (using Doppler) if repeatable or if appropriate ocular signs were present. Of the 303 cats tested 12.9% were diagnosed with hypertension. Interestingly over 22% became hypertensive after their hyperthyroidism was treated (between 3 and 9 months after starting therapy). Renal status was not associated with the risk of hypertension. This study does suggest that blood pressure should be checked when hyperthyroidism is diagnosed and routinely during treatment.

Morrow LD et al. Hypertension in hyperthyroid cats; prevalence, incidence and predictors of its development. JVIM 23; 699: 2009

26th Annual ACVIM Forum San Antonio

Pimobendan and therapy of pulmonary hypertension

Pimobendan has shown some benefit in treating pulmonary hypertension (PHT) in humans. PHT is a difficult disease to treat and prognosis is usually poor in dogs. The use of sildenafil has been investigated for the treatment of PHT and may be of benefit. This study involved 10 dogs diagnosed with PHT. These dogs showed clinical signs such as cough, right sided heart failure or syncope. The patients were followed for 91 days with echocardiography and quality of life scores. The patients were given either pimobendan or a placebo for 14 days after which they were switched to the other treatment. After this all dogs received pimobendan for 8 weeks. Pimobendan significantly decreased echo parameters of PHT in the short term. Quality of life also improved. Unfortunately only the effect on echo parameters was maintained at 90 days, quality of life was not changed. This may be from the small number of dogs or more likely that PHT is a progressive disease with poor prognosis. Certainly pimobendan is a viable option for treating PHT in dogs though the prognosis still remains poor though a short-term positive effect can be expected.

Atkinson KJ et al. Evaluation of pimobendan for the therapy of canine pulmonary hypertension. JVIM 22; 761-2: 2008.

Multi drug resistant e. Coli following enrofloxacin therapy

There is always concern that antibiotic administration can lead to resistant bacteria. Multidrug resistant bacteria (MDR) are of great concern to the patient, owner and clinic. In this study groups of 8 dogs were given either enrofloxacin, amoxicillin or no antibiotic. Dogs were studied for at least 7 days or up to 21 days. The medications were stopped once resistance developed (> 75% of CFU resistant). The dogs were then followed for up to 4 weeks or when < 25% of the CFU were resistant. None of the dogs had any resistance at the beginning. Resistance to amoxicillin developed in the amoxicillin and enrofloxacin treated groups. Enrofloxacin resistance was only encountered in those dogs treated with enrofloxoacin (half the dogs). All isolates that developed enrofloxacin resistance were all also MDR. Amoxicillin resistance disappeared rapidly, whereas enrofloxacin resistance was more persistent.

Debavalya N, Boothe DM, Hathcock T. Multidrug resistance in fecal Escherichia coli following routine enrofloxacin but not amoxicillin therapy in dogs. JVIM 22; 786: 2008.

25th Annual ACVIM Forum Seattle

Pimobendan and treatment of heart failure

Pimobendan is a new drug that is highly effective for treating heart failure. The drug is both a positive inotrope as well as a vasodilator. Older positive inotropes that were used in humans showed a significant increase in mortality associated with ventricular arrhythmias and sudden death. This perception has also been associated with pimobendan, though mortality data in humans is at best equivocal and in some studies actually showed improved survival.

Researchers from the University of Guelph Ontario Veterinary College are investigating the efficacy of pimobendan vs. benazapril for the treatment of heart failure in dogs with chronic mitral valve disease. Of 47 dogs enrolled in the study, 23 dogs had Holter monitors before and 1 to 5 months after initiation of therapy. Of these 23 dogs, 13 received pimobendan (0.25 mg/kg BID) and 10 benazapril (0.25 to 0.5 mg/kg BID) together with diuretics. VPCs varied from 0 to 1788 in 24 hours with an average of 0.2/hour. There was no difference between groups at baseline or after initiation of therapy. This study shows that most dogs with chronic mitral valve disease have a low incidence of ventricular arrhythmias, though this is highly variable between individuals. The use of pimobendan did not exacerbate this.

O'Sullivan ML, O'Grady MR, Walker C. Frequency of ventricular ectopy in dogs with chronic mitral valve disease and congestive heart failure treated with pimobendan or benazapril. JVIM 21; 587: 2007.

Urinary tract infections in cats with various diseases

Generally it is felt that the risk of a UTI is low in cats, other than those with predisposing diseases such as diabetes mellitus, hyperthyroidism, or chronic renal failure. It is suspected that the low urine specific gravity seen with these diseases may be the reason for increased risk of infections. Researchers from the University of California-Davis looked at records from cats presented between 1997 and 2002. Cats were included that either had lower urinary tract signs or had one of the diseases thought to be associated with a greater risk of UTI. A total of 615 cats were evaluated. Urine cultures were positive in 4.9% of cats that presented with signs of lower urinary tract disease without predisposing factors. Cultures were positive in 16.9% of cats with chronic kidney disease, 13.2% of cats with DM and 21.7% of cats with uncontrolled hyperthyroidism. Urine specific gravity was not associated with the risk of UTI. The presence of WBCs in the urine, bacteruria and hematuria were all positively associated with an increased risk of UTI. Persian cats, female cats and increasing age were all significantly associated with increased UTI risk. This study shows that cats presented with DM, hyperthyroidism or chronic kidney disease should have a urine culture performed routinely.

Bailiff N, Westropp J, et al. A comparision of urinary tract infections in cats presenting with lower urinary tract signs and cats with chronic kidney disease, hyperthyroidism and diabetes mellitus. JVIM 21; 649: 2007.

24th Annual ACVIM Forum Louisville

Cats and potassium bromide

Epilepsy is a relatively uncommon problem in cats, though treatment seems to be less successful. Phenobarbital is the most commonly used drug and can be efficacious. As with dogs, side effects can occur and include neutropenia, sedation, polyuria, polydipsia and potentially coagulation defects. If response to phenobarbital is poor, diazepam is commonly added to the treatment protocol. This too can have adverse effects in cats and severe liver disease has been reported in cats given oral diazepam. In dogs potassium bromide has become a very popular medication to treat seizure disorders, either as a sole agent or as an add-on to phenobarbital. Potassium bromide has been used in cats.[1] A dose of 30 mg/kg/day resulted in therapeutic blood levels within 2 weeks in experimental cats. This report also retrospectively looked at the results of treating 17 cats with seizures. In 7 of 15 cats where seizure activity was reported the seizures were well controlled. In 8 cats however adverse side effects occurred. Coughing was most common with 6 cats being affected. One cat was euthanized because of the severity of the cough and lung changes noted radiographically. In 2 others bromide was discontinued because of the cough. The severe respiratory changes have been noted in other studies and abstracts.

Researchers from the Royal Veterinary College in the United Kingdom looked at the efficacy of bromide use in cats.[2] A total of 9 cats with epilepsy were studied. Bromide appeared to be quite efficacious in the treatment of seizures, the incidence decreased from around 4 per month to less than one per month on bromide. Five of the cats had no seizures during the study period. Coughing developed in 6 of the 9 cats after 8.2 ± 2.1 months. This resulted in discontinuation of bromide in 3 cats, 2 owners elected to continue bromide in spite of the cough. One cat developed dermatitis that may have been associated with bromide use. Bromide was discontinued and the cat failed to respond to phenobarbital resulting in its euthanasia.

This report shows that bromide does appear to have efficacy for the treatment of seizures in cats. This is consistent with previous reports. The incidence of adverse side effects was relatively high and respiratory problems appear to be relatively common. The side effects can be severe enough to result in the death of the patient. Nonetheless bromide is a consideration in cats that are not responding to or cannot tolerate phenobarbital and/or diazepam. Close monitoring for any signs of respiratory problems is vital. Prompt discontinuation of bromide may result in resolution of respiratory signs.

Boothe DM, George KL, Couch P. Disposition and clinical use of bromide in cats. JAVMA 221;1131-1135: 2002.2

Volk HA, Chandler KE, et al. New insights into efficacy and side effects of potassium bromide in epileptic cats. J Vet Intern Med 20;780: 2006.