



SELECTED HIGHLIGHTS FROM THE 2006 ACVIM FORUM

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INTRODUCTION

The 24th annual 2006 ACVIM Forum was recently held in Louisville. State-of-the-art scientific presentations and research abstracts were some of the highlights of the Forum. This meeting has the most up-to-date information regarding many internal medicine topics. This lecture will review some of the more clinically relevant topics.

Vacuolar Hepatopathy in Dogs: 336 cases (1993-2005). LM Sepesy, et al. Vacuolar hepatopathy is due to glycogen distention of hepatocytes, and has usually been attributed to endogenous or exogenous glucocorticoid excess. However, some dogs with vacuolar hepatopathy are not exposed to excess glucocorticoids. In this retrospective study, 336 dogs with vacuolar hepatopathy were identified. The severity of the vacuolar hepatopathy was evaluated, and the underlying disorder identified and characterized as neoplastic (n = 94), acquired hepatobiliary (43), adrenal (40), neurologic (38), immune-mediated (34), gastrointestinal (31), portal vascular anomalies (13), renal (12), infectious (6), cardiac (5), diabetes mellitus (3), and miscellaneous (17). There were 186 dogs exposed to excess glucocorticoids and 150 dogs without excess glucocorticoid exposure. Even though dogs with glucocorticoid exposure had higher mean ALT and ALP activities, there was broad overlap preventing discriminating use of these enzyme activities for predicting glucocorticoid exposure. Of 226 dogs with high serum ALP activities, 45% were not exposed to glucocorticoid excess. The authors concluded that nearly 50% of dogs with moderate to severe vacuolar hepatopathy, and nearly 50% of dogs with vacuolar hepatopathy with increased serum ALP activities were not exposed to excess glucocorticoids. Neoplasia and congenital or acquired primary hepatobiliary disorders were common underlying disorders. Thus, vacuolar hepatopathy does not reliably indicate exposure to excess glucocorticoids, but rather there may be an underlying disorder. This suggests an association between vacuolar hepatopathy, increased ALP activity, and illness-invoked physiologic stress. Thus, if vacuolar hepatopathy is determined from results of hepatic biopsy, the patient should be evaluated for chronic exogenous glucocorticoid administration, adrenal disease and underlying neoplasia. In addition, the finding of vacuolar hepatopathy on FNA of the liver may falsely exclude dogs with other types of hepatobiliary disease.

Pharmacologic Therapy of Chronic Mitral Valve Disease. Consensus Statement Draft presented by Bruce Keene. Dr. Keene presented the first draft of the expert panel that made these diagnostic and treatment recommendations.

The panel proposed a reclassification of heart failure that will be the basis for their recommendations. Class A are patients at high risk, but currently a normal heart (i.e. a Cavalier King Charles Spaniel without a murmur). Class B are patients with structural cardiac changes but no clinical signs (i.e. valvular lesion, atrial and/or ventricular enlargement). Sub-class B1 are patients with hemodynamically insignificant mitral regurgitation. Sub-class B2 are patients with hemodynamically significant mitral regurgitation (i.e. with left atrial enlargement). Class C are patients that are currently or previously in congestive heart failure (once in C, they cannot be reclassified as A or B). Class D are patients who are refractory to standard treatment.

Treatment of Class A: No treatment warranted, though regular yearly health care checks are recommended.

Treatment of Class B1: These patients should have a blood pressure measurement and either thoracic radiographs or 2-D echocardiogram. A Doppler study would be ideal or to answer questions not answered by radiographs or with atypical changes. No treatment is warranted in this stage. Small dogs should be rechecked yearly; large dogs should be rechecked every 6 months.

Treatment of Class B2: No consensus was reached, but the majority of the panel recommended an ACE-inhibitor and/or β -blocker.

Treatment of Class C: If stable, evaluation should include thoracic radiographs, appropriate laboratory work (CBC, chem. panel, UA), blood pressure measurement, 2-D and Doppler echocardiography, and EKG. Acute treatment should consist of furosemide, 2 mg/kg (IV, SQ or IM) q 30 minutes up to 6 mg/kg total dose. Consider a CRI for life-threatening edema. In addition, patients should receive oxygen as needed, access to water, appropriate nursing care (turning, etc), an ACE-inhibitor (unless the patient is on a specific arterial dilator), nitroglycerine ointment for 24-36 hours, and sedation as needed (such as buprenorphine + acepromazine). Additional recommendations that were common but not a consensus were administration of pimobendan (0.25-0.3 mg/kg bid), hydralazine or amlodipine (not used with nitroprusside), nitroprusside x 24-48 hours, digoxin (for atrial fibrillation), dobutamine (for hypotension, <85 mm Hg) x 12-24 hours, and possible mechanical ventilation. Chronic treatment (at home) consists of furosemide to effect starting with 2 mg/kg bid then 1-2 mg/kg sid-2 mg/kg tid, spironolactone (0.5-2 mg/kg sid-bid), an ACE-inhibitor (0.5 mg/kg bid), pimobendan, and occasionally digoxin (if atrial fibrillation is present) at a dose of 0.005 mg/kg bid, targeting a blood level of 0.5-1.5 ng/ml. Additional non-consensus recommendations included a β -blocker (usually carvedilol) to be initiated only once out of failure, diltiazem to control heart rate, cardioversion or amiodarone for atrial fibrillation, and a cough suppressant if needed.

Treatment of Class D: Ensure that all of the above recommendations are being followed. Investigate all causes of decompensation (through a physical examination, appropriate lab work, blood pressure measurement, EKG, and echocardiogram). Additional measures could include

the following: furosemide should be increased (though renal function needs to be monitored), pimobendan added (if not already on it), add amlodipine (0.1-0.2 mg/kg sid-bid) with careful blood pressure monitoring, digoxin added in select cases (atrial fibrillation), sildenafil (1 mg/kg bid-tid) if pulmonary hypertension is present, diltiazem to control heart rate, hospitalize for nitroprusside and/or dobutamine, and add a cough suppressant/bronchodilator for refractory cough.

Myths and Misconceptions in Small Animal Therapeutics. Mark Papich. Dr. Papich pointed out several myths and misconceptions.

Transdermal Gels. In general, these are very unreliable. Only methimazole +/- amlodipine have demonstrated efficacy in dogs or cats. These are drugs that have an easily measurable effect. There is a long list of drugs that have been shown to have minimal transdermal absorption (glipizide, dexamethasone, buspirone, amitriptyline, fentanyl, morphine, fluoxetine, enrofloxacin, and diltiazem). It is difficult to get drugs soluble in very low volumes, especially since transdermal absorption favors lipophilic drugs.

Controlled Release Drugs. In general, these drugs do not last as long in dogs as humans. This is due to rapid GI transit time, a relative shorter intestine, taller villi, and wider intercellular pores at the base of enteric crypts.

Bacteriostatic + Bacteriocidal Antibiotics. These can be rationally combined (with no good evidence to suggest this should not be done). Consider concentration-dependent vs. time-dependent as a more rational classification.

Tramadol. There are no data on efficacy in dogs. The metabolite (desmethyltramadol, also known as M1) is the most active moiety on opiate receptors. Studies at North Carolina St. University have shown that dogs do make this metabolite, but have increased clearance compared to people. Therefore, tramadol in dogs should be dosed at 5 mg/kg q 6 hours to achieve blood levels that are considered therapeutic in people.

Percutaneous Transvenous Coil Embolization (PTCE) of Intrahepatic Portosystemic Shunts: Experience in 33 Dogs. C Weisse, et al. The purpose of this study was to prospectively evaluate the results of percutaneous transvenous coil embolization of intrahepatic portosystemic shunts in 33 dogs. Shunts were accessed by a percutaneous jugular approach using contrast angiography. A metallic stent was placed across the vena cava where the shunt entered (to prevent "launching" of coils), and thrombogenic coils deployed to partially occlude the shunt while measuring portal pressures. Major peri-operative complications only occurred in one dog (portal hypertension). Perioperative mortality occurred in 3 dogs (portal hypertension, seizures and aspiration pneumonia, and duodenal ulcer perforation). The overall mortality (10 dogs; 31%) was due to gastrointestinal disease in 4 of 10 dogs. Currently, 15 dogs (47%) are clinically normal off of medication, 7 dogs (22%) are doing well, but have not been weaned off of medication yet, and 10 dogs died or were euthanized (31%). The authors conclude that percutaneous transvenous coil embolization of intrahepatic portosystemic shunts has lower perioperative morbidity and mortality rates than previously reported open surgical procedures,

with similar long-term success. Gastrointestinal ulceration was a common finding in these dogs, and life-long gastroprotectant medications are recommended by the authors.