

CARDIOLOGY



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TREATMENT OF MITRAL VALVE DISEASE PRIOR TO THE ONSET OF CHF – THE BAD AND THE UGLY

The most common cardiac condition faced by veterinarians in daily first-opinion practice is canine myxomatous mitral valve disease. Clinicians and owners want to know two things: (A) can I prevent or delay progression of the disease with pharmacotherapy and (B) can I prolong survival and decrease morbidity once congestive heart failure (CHF) develops.

Subclinical heart disease – a question of faith or science?

Only a small percentage of dogs with MMVD develop CHF, but many dogs have MMVD. Thus, drug companies in the 1990s began to investigate “early intervention” in heart disease with various drugs. The first of these – enalapril – was investigated in Cavalier King Charles Spaniels. The SVEP trial failed to show any effect of early intervention with ACEI. Valid concerns about the study were the dosing protocol – although subanalysis failed to demonstrate any difference in outcomes – and the use of a single breed that might not represent the general small-breed canine population at large. Therefore, the VETPROOF trial examined small-breed dogs of all breeds, with evidence of left atrial enlargement. Again, no effect was observed. A third, retrospective study followed (somewhat illogically, one would think) that claimed to show a benefit of early ACEI therapy. Flaws in that study largely negate the conclusions the authors made.

The study of the value of pimobendan in preclinical MMVD is currently underway. However, at least 2 studies have suggested that chronic administration of pimobendan to apparently healthy dogs and dogs with mild MMVD might exacerbate the valvular pathology. Thus, whether giving this drug to dogs with preclinical MMVD is beneficial, remains to be determined.

No data have been published demonstrating any benefit to aldosterone receptor antagonism in pre-clinical mitral valve disease.

One study examined the effect of amlodipine in both clinical and subclinical MMVD dogs and found a reduction in the regurgitant fraction, but did not evaluate the effect of amlodipine on progression to CHF.

Recent studies on pathogenesis of mitral valve disease have implicated the role of serotonin in the genesis of the myxomatous degeneration. Thus, very early intervention with serotonin receptor antagonists could delay progression of the disease. One study examined the effect of a serotonin receptor antagonist on progression of regurgitation and found no effect (but had extremely small sample sizes and variable disease status at entry).

It's enough to give you palpitations

Arrhythmias in dogs with MMVD are common, however, sudden death is uncommon. Most arrhythmias are supraventricular, due to atrial distension. Treatment is largely empirical, and dictated by the rate and duration of the arrhythmia, because of the potential for inducing tachycardia-associated myocardial failure. Most commonly, drugs such as diltiazem, atenolol or digoxin are prescribed. However, no studies exist demonstrating the benefit of any arrhythmia control in small-breed dogs with MMVD.

Oh, how little we know!

Clinicians should realize how flimsy the scaffolding is upon which most recommendations of cardiac therapy are made. Without well-designed clinical prospective studies, optimizing cardiac therapy for our patients will be difficult, and evidence-based decisions will be largely made on the basis of personal experience, anecdotal evidence and expert opinion.