

Pimobendan— A Silver Bullet?

Pimobendan has been touted as a Silver Bullet – but is there such a thing?

Congestive heart failure is a result of a complex interaction of not only hemodynamic but neurohormonal derangements. Optimal therapy addresses the multifaceted nature of the disease. CVCA has been prescribing Pimobendan for over five years as a beneficial adjunct therapy to our balanced approach to congestive heart failure. Subsequently, we have obtained a substantial amount of experience during the treatment of our mutual patients including our participation in FDA trial. We continue to use Pimobendan as a rescue therapy for patients with congestive heart failure whose clinical signs have become refractory to the standard therapy of diuretics, ACE-inhibitors, other vasodilators, beta blockers as possible, digoxin and anti-arrhythmics when indicated.

CVCA's Experience with Pimobendan

CVCA's therapeutic stance is a result of collaborative discussions and thoughtful consideration of the most appropriate use of Pimobendan given the best available evidence and collective clinical experience. There is currently no evidence that instituting Pimobendan early in the course of disease offers benefit over standard therapy nor has it been shown to slow the progression of disease. On the contrary, there is published evidence of significant worsening of histopathologic changes of valves and degree of regurgitation in dogs with naturally occurring valve disease when receiving chronic administration of Pimobendan in comparison to Benazepril. In a small study performed by CVCA, it was determined that after two to three weeks of Pimobendan therapy about 75% of dogs had an increased frequency of ventricular arrhythmias documented on 24 hour ambulatory ECG monitoring. There is also published evidence that there is no positive change in hemodynamic or echocardiographic parameters in dogs with asymptomatic heart disease.

Mechanism and Efficacy

Pimobendan is categorized as an inodilator (vasodilator and positive inotrope) through its main mechanism of action: Phosphodiesterase III inhibition. This inhibition contributes to positive inotropy and results in balanced vasodilation of both the systemic and pulmonary vascular beds. There is also some evidence that Pimobendan inhibits inflammatory cytokines seen in chronic heart failure (TNF, NO) and may have a centrally mediated action that induces an increased sense of general well-being (improving activity and appetite despite a lack of significant changes in objective parameters). Its clinical use began in Europe and initial investigations showed significant promise for its use in dilated cardiomyopathy.

Pimobendan was subsequently licensed in the United States for use in dogs with congestive heart failure in May of 2007 after demonstrating non-inferiority to the ACE-inhibitor Enalapril. Since that time, there have been numerous studies evaluating Pimobendan's effect and utility in canine degenerative valve disease. Most notably, the QUEST study, published in JVIM late last year, demonstrated a significant survival benefit with the use of Pimobendan in comparison to Benazepril in dogs with congestive heart failure from degenerative valvular disease. This finding was also substantiated by the VetSCOPE trial, and subsequently some have touted Pimobendan as the answer to veterinary cardiology's problems. However, just as prednisone is not necessarily the answer for the itchy dog, Pimobendan is not the sole panacea for the coughing dog with a heart murmur.

The Future of Pimobendan

At this time the question is not if Pimobendan is beneficial in dogs with congestive heart failure due to valvular disease, but when is the ideal time to initiate therapy in order to maximize survival and optimize quality of life? This clinical question and innumerable others remain to be answered in clinical veterinary cardiology and our approach to the cardiac patient will continue to evolve with the results of pending clinical trials and the advent of emerging therapeutics. However, in the meantime we must strive to provide the optimal care for our patients through open collaboration. Working together, we will continue to optimize the quality and quantity of life of our mutual patients.



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