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## **CLINICAL USE OF PIMOBENDAN IN DOGS – 2 PAGES**

**Pimobendan** (Vetmedin) was recently approved by the FDA for clinical use in dogs with congestive heart failure but has been used in other countries since 2000. Pimobendan is a new medication which exhibits many properties which are beneficial for managing congestive heart failure secondary to chronic valve disease (CVD) and DCM in dogs and has shown to improve quality of life and extends survivability in dogs with DCM (study in dogs with CVD - ongoing).

**Mechanism of action:** sensitizes the cardiomyocytes to intracellular calcium and functions as a positive inotrope without increasing myocardial oxygen demand. It is also a phosphodiesterase III inhibitor which results in balanced arteriovenous dilation.

### **Beneficial effects of Pimobendan**

- preload reduction due to vasodilation
- afterload reduction by balanced arteriovenous dilation
- enhance contractility/ positive inotrope
- reduction in pulmonary hypertension secondary to phosphodiesterase III inhibition (commonly occurs in cases of chronic CHF with chronic left sided overload)
- modulates cytokines to improve survivability

### **Clinical indications for use of Pimobendan**

- congestive heart failure (left and right sided) secondary to CVD and DCM in dogs (new cases, decompensated cases, stable but Lasix dependant).
- forward failure (poor peripheral perfusion resulting in cold extremities, weakness, collapse and exercise intolerance)

Pimobendan should be used in conjunction with other standard therapies such as Lasix and an ACE inhibitor (enalapril or benazepril) and can be safely used in combination with additional medications such as spironolactone, digoxin and other anti-arrhythmics (beta-blockers, calcium channel blockers as examples). ***Pimobendan is to be used as an adjunct to these medications and is not a substitute and should not be used as a single agent.*** All of the standard medications have specific effects in the overall management of CHF and the use of these medications in combination is currently considered standard of care.

**Dose:** 0.25-0.3 mg/kg PO BID.

Pimobendan has been used as a rescue agent in cats for this indication and appears to be well tolerated.<sup>11,12,14</sup>

However due to pimobendans ancillary properties (positive lusiotropy, anti-platelet effects, cytokine modulation) there may be rationale for its use in congestive HF due to all cardiomyopathies.<sup>13</sup> However, its safety in CM characterized by obstruction to outflow (hypertrophic obstructive cardiomyopathy) would need to be better established

**\*\*\*\*\*Contraindications: *Do not use Pimobendan in the preclinical stage of either DCM or CVD (i.e. no clinical signs, no evidence of congestive heart failure).***

**References:**

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