The American College of Veterinary Internal Medicine (ACVIM) classifies cardiac disease into 4 stages: A (at risk), B (murmur), C (congestive heart failure) and D (refractory to standard therapy). It is generally accepted that dogs in the C and D class benefit from therapy, but less is known about the dogs in A and B classes. Dogs in the B class can be further subdivided into those without measureable enlargement of the heart (B1) and those with measureable enlargement of the heart (B2).

Although myxomatous mitral valve disease (MVD) is the most common heart disease in dogs, only a minority of dogs with this disease (25-35%) will progress into congestive heart failure. There are not currently methods of determining which dogs will progress from this B1 to C stage. Committing all dogs with MVD to medications would be expensive, not without side effects, and not necessary in the majority of dogs with MVD.

Previous studies have shown clear benefit of medications such as angiotensin converting enzyme inhibitors (ACEis) and pimobendan in dogs with congestive heart failure. Some studies have demonstrated potential benefit of ACEis in dogs prior to on onset of clinical signs, while others have not.

Pimobendan is a medication that sensitizes the myocardium to calcium, improving cardiac output (contractility), and it is also is a phosphodiesterase 3 (PDE-3) inhibitor, decreasing the workload of the heart. A recently published trial, Effect of Pimobendan in Dogs with Preclinical Myxomatous Mitral Valve disease and Cardiomegaly: The EPIC Study – A Randomized Clinical Trial, investigated the use of pimobendan in dogs with preclinical MVD. This is one of the few prospective multi-center, randomized, blinded, placebo-controlled clinical trials with sufficient numbers of dogs ever published, and makes significant changes to managing dogs with MVD.

The study looked at dogs between 4 and 15 kg, at least 6 years of age with a heart murmur and evidence of MVD based on radiographic measurements (VHS > 10.5) and echocardiographic evidence (LA/Ao ratio of > 1.6, LVIDDN > 1.7) of heart enlargement. These dogs did not have evidence of concurrent disease other than well controlled hypothyroidism.

The dogs were either placed on pimobendan (at 0.4-0.6 mg/kg/day) or placebo and followed to the primary endpoints of death or development of congestive heart failure. The study was actually terminated early as a therapeutic benefit was noted during interim statistical evaluation.

354 dogs were included in the study, and 162 dogs (45%) reached the primary endpoint. Dogs in the placebo group met the primary endpoint with at a median of 766 days and in the pimobendan group at 1228 days, a difference of 462 days (more than 15 months).

The implications in clinical practice are significant. If a patient has or develops a heart murmur or a change in heart murmur, regular investigation for evidence of cardiomegaly is warranted (radiographs and echocardiogram). If cardiomegaly is not noted, the dog remains in class B1 and regular monitoring is recommended. If evidence of cardiomegaly is present as
noted above, secondary to MVD, initiation of pimobendan is warranted and may prolong the onset of clinical signs by a median of 15 months.