

Effect of treatment with spironolactone in dogs with pulmonary hypertension and myxomatous mitral valve disease

Purpose

To test whether treatment with the diuretic drug spironolactone, in addition to conventional therapy for congestive heart failure (CHF), will improve pulmonary hypertension caused by mitral valve disease.

Background

Pulmonary hypertension (PH) is a common complication of mitral valve disease (MVD) in dogs, and it nearly doubles their risk of death. Spironolactone is a type of diuretic drug (sometimes called “water pills”) that could have a beneficial effect at the level of the pulmonary vessels.

Eligibility

- Diagnosis of mitral valve disease (stable ACVIM Stage C):
 - Left apical systolic murmur, thickened and prolapsing mitral valve leaflets, and mitral valve insufficiency.
 - Radiographic evidence of pulmonary edema (current or past).
 - Before enrollment, patients will have been treated with diuretics, ACE-inhibitor and pimobendan for at least 1 week without the need for dosage changes.
- Negative heartworm test, consistently followed by correct administration of heartworm preventative drugs.

Exclusion

- Concomitant cardiovascular abnormalities other than, and not related to, MMVD as assessed by echocardiography. Particularly, dogs with evidence of right ventricular outflow tract obstruction will be excluded.
- Concomitant evidence of systemic disease, as evaluated by physical examination, complete blood count (CBC) and blood chemistry profile.
- History of positive heartworm test.
- History or current presence of respiratory disease, as assessed by owner interview and thoracic radiographs.
- Presence of unstable CHF as assessed by physical examination and thoracic radiographs.
- Hyperkalemia as assessed by blood chemistry profile.
- Concomitant treatment with drugs having cardiovascular effects other than ACE-inhibitors, furosemide, pimobendan, heartworm preventative.
- Presence of arrhythmias that would require medical treatment.
- Temperament that requires sedation for performing diagnostic procedures.

Study Design

An initial visit including heart ultrasound, chest X-rays, and blood sampling will be performed. Dogs will be randomly assigned to receive either spironolactone or a placebo (a pill that looks exactly like the drug, but that does not contain any active principle) every day for a month as directed. Owners and clinicians will be unaware whether dogs are receiving spironolactone or the placebo. The ultrasound and blood sample will be repeated after 1 week and 1 month from the initial visit. The chest x-rays will also be repeated at the 1 month visit. Enrolled dogs will continue to receive their regular medications.

Compensation

Physical examination, echocardiography (heart ultrasound), blood analysis, and thoracic radiographs required by the study will be performed at no cost. The study drug (or placebo) will be provided at no additional cost. The owner will still be responsible for the cost of drugs other than the study drug, and for costs associated with any additional examination that will be deemed necessary by the clinician. The total value of the examinations offered at no cost is more than \$1,700.

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