A RANDOMISED DOUBLE BLINDED PLACEBO CONTROLLED STUDY OF SPIRONOLACTONE AS ADJUNCT TO CONVENTIONAL CONGESTIVE HEART FAILURE TREATMENT IN DOGS: ECG, RADIOGRAPHIC, ECHO AND SURVIVAL ANALYSIS

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Aldosterone plays an important role in the pathophysiology of heart failure, promoting sodium retention, sympathetic activation as well as myocardial and vascular fibrosis. Evidence from the Randomized Aldactone Evaluation Study (RALES) demonstrated that aldosterone receptor blockade by spironolactone at subdiuretic dosage reduced morbitity and mortality in human patients with severe congestive heart failure. Aims of this longitudinal randomized placebo controlled clinical trial were to evaluate the effect of spironolactone in addition to conventional treatment including furosemide (n=18) and angiotensin-converting enzyme inhibitors (enalapril n=3 ; benazepril n=15), pimobendan (n=9) and digoxin (n=2) on the clinical outcome and biochemical parameters in dogs with CHF. Eighteen client-owned dogs with CHF (Modified NYHA Classification Stage II (n=12) and III (n=6)) due to either degenerative valve disease (n=7) or dilated cardiomyopathy (n=11) were enrolled in the study. After initial stabilisation, spironolactone at a subdiuretical dose (mean dose 0.58 mg/kg/24h (range 0.49-0.8 mg/kg q 24h) ; n=9) or a placebo (n=9) was added to the treatment and the dogs were reassessed 1 week, 3 months and 6 months later. History, clinical examination, electrocardiography, thoracic radiographs and echocardiography were performed at baseline, 3 months and 6 months. There was a significant decrease in heart rate in the spironolactone group (spiro) as recorded by ECG (p= 0.022). There was no significant change in the prevalence of supraventricular or ventricular depolarisations over time on a 5 min ECG strip. There was no significant difference in the vertebral heart size over time. Based on radiographic evidence of congestive signs in the spiro group 50 % of the dogs were classified in Stage II and 50 % in Stage III CHF at the beginning and 60 % in Stage II and 40 % in Stage III at the end of the trial. In the placebo group 78 % were in Stage II and 22 % in stage III at the beginning and 17 % in Stage II, 50 % in Stage III and 33 % in Stage IV at the end of the trial. IVSd increased in the spiro group and decreased in the placebo group (p=0.041). No difference was found between the two groups for IVSs, nor LVd, LVs, PWd, PWs, FS (%), LA2D; Ao/LA, and PEP/ET. Kaplan Meier survival analysis (30 months follow-up) did not show a significant difference in survival between the two treatment groups (log rank p= 0.88). Larger studies are warranted to show survival benefits in dogs.