

EVALUATION OF A COMMERCIAL PRO-ANP ASSAY IN A CANINE CARDIORESPIRATORY REFERRAL POPULATION IN BELGIUM.

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Atrial Natriuretic peptide (ANP) is a hormone manufactured in and released from the atrial myocardium in response to stretch and increased atrial wall stress. Concentrations of its propeptide (PRO-ANP) can be measured in the circulation and increase significantly with cardiac disease. Aims of the study were to assess the potential of this assay to differentiate respiratory disease from cardiac disease, to investigate the ability of this test to differentiate heart disease from heart failure, to differentiate the stages C1, C2, C3 and D of the CHIEF classification system, to differentiate between a cough caused by cardiac or respiratory problems and to differentiate between dyspnoea of cardiac or respiratory origin. It was also investigated whether this test is useful in case of concurrent renal disease or if these animals should be excluded.

Serum samples from 46 dogs out of a cardiorespiratory referral population were taken, spun and frozen immediately and then sent in bulk to Guildhay under temperature controlled conditions with ice packs and analysed for PRO-ANP.

“Abnormal” samples were those animals diagnosed on the basis of a full cardiac work-up (ECG, thoracic radiographs and echocardiography) as having heart disease, being in heart failure or having respiratory disease.

Analysis showed that on the current UK PRO-ANP cut off value of 910 fmol/ml for serum this study has 1) a specificity of 80% and a sensitivity of 61% when distinguishing cardiac from non-cardiac problem when including renal patients; 2) a specificity of 92% and a sensitivity of 68% when distinguishing cardiac from non-cardiac problem dogs excluding renal patients; 3) a specificity of 70% and a sensitivity of 94% when distinguishing heart disease from heart failure patients; 4) a specificity of 80% and a sensitivity of 60% when distinguishing a cardiac from a respiratory cause of dyspnoea; 5) a specificity of 92% and a sensitivity of 87% when distinguishing a cardiac from a respiratory cause of coughing.

The AUC in all cases showed good accuracy with very good accuracy in the distinction of cardiac and respiratory causes of coughing and dyspnoea as well as distinguishing respiratory from cardiac patients when renal patients were excluded from the study.

The 100% positive predictive value for PRO-ANP, when including renal patients, was 1910 fmol/ml and when excluding renal patients is 980 fmol/ml.

The 100% negative predictive value for PRO-ANP, when including renal patients, was 380 fmol/ml and when excluding renal patients is 450 fmol/ml.