

combination of TMZ with CQ enhanced the cytotoxicity of TMZ by blocking autophagy. Taken together, application of TMZ could be a novel therapeutic strategy to overcome drug resistance in HMMs.

## P-112

### Diagnostic value of echocardiographic indices and cardiac biomarkers in dogs with chronic mitral valve insufficiency

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**Introduction:** The aim of this study was to evaluate the diagnostic values of several echocardiographic markers and cardiac biomarkers for detecting heart disease and heart failure in single study population (dogs with CMVI) consisting of small breeds of dogs.

**Materials and Methods:** This study evaluated the diagnostic value of several echocardiographic indices and cardiac biomarkers for detecting heart disease and heart failure in 51 dogs with chronic mitral valvular insufficiency (CMVI) and 18 healthy control dogs.

**Results:** The most sensitive markers for detecting heart disease in order were indexed left atrial diameter (iLA), left atrial to aorta ratio (LA/Ao), N-terminal probrain natriuretic peptide (NT-proBNP), transmitral E-peak (E-peak), septal E/Ea ratio (sE/Ea), cardiac troponin I (cTnI) and end-diastolic volume index (EDVI), while the most specific markers were left ventricular diastolic dimension (LVIDd), indexed left ventricular diastolic dimension (iLVIDd), E-peak, NT-ProBNP, sE/Ea, LA/Ao, parietal E/Ea ratio (pE/Ea), and LVIDd/ aorta ratio (LVIDd/Ao). The most sensitive markers for detecting heart failure in order were LA/Ao, iLA, E-peak, sE/Ea, NT-proBNP, %fractional shortening (%FS) and LVIDd/Ao, while the most specific markers were LA/Ao, EDVI, ESVI, pE/Ea, sE/Ea, cTnI, LVIDd and iLVIDd.

**Conclusions:** This study found iLA, LA/Ao, E-peak, E/Ea and NT-proBNP were the most reliable and consistent marker for detecting heart disease and for differentiating symptomatic heart failure dogs from asymptomatic dogs with CMVI.

## P-113

### Prognostic indicators for dogs with chronic mitral valvular insufficiency

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**Introduction:** The purpose of this study was to investigate the prognostic value of various clinical signs, echocardiographic indices and cardiac biomarker in symptomatic dogs with chronic mitral valvular insufficiency (CMVI).

**Materials and Methods:** The relationship to survival of 10 variables was evaluated in 72 dogs with advanced stage of heart failure. Studied variables were ascites, syncope, medication of pimobendan, plasma N-terminal probrain natriuretic peptide (NT-proBNP), left atrial to aortic root ratio (LA/Ao), left ventricular diastolic dimension to aortic root ratio (LVIDd/Ao), indexed left atrial diameter (iLA), end-diastolic volume index (EDVI), transmitral E-peak velocity (E-peak) and E-peak to septal E velocity (E/Ea).

**Results:** Median survival time (range) in this study population was 778 (280-1095) days. Dogs having medical history of ascites or syncope, no pimobendan administration during therapy, echocardiographic indices LA/Ao >2.0, LVIDd/Ao >2.5, iLA >18 mm, EDVI >60 mL/m<sup>2</sup>, E-peak >115 cm/sec, and E/Ea >10.0, and plasma NT-proBNP level >2200 pmol/L were significantly shorter survival time after the diagnosis. Clinical signs of ascites and syncope, LA/Ao >2.0 and LVIDd/Ao >2.5 were closely correlated to survival time and event of cardiac-related death in this study. Clinical signs of ascites and LA/Ao >2.0 were independent predictors for survival time and cardiac related to death in dogs with CMVI.

**Conclusions:** This study firstly evaluated the effect on survival time and events of cardiac-related death from known clinical signs related to CMVI, known echocardiographic indices and cardiac biomarker in symptomatic dogs with CMVI.

## P-114

### Evaluation of serum adiponectin levels, ratio of pulmonary arterial flow of acceleration time to ejection time ratio, and right pulmonary artery distensibility index in dogs with pulmonary hypertension

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**Introduction:** Pulmonary hypertension is characterized by persistently high pressure in pulmonary vasculatures and right sided cardiac chambers by primary and secondary causes, leading to right sided congestive heart failure. This study evaluated serum levels of adiponectin and echocardiographic