



P-11. TRICUSPID REGURGITATION VELOCITY/PULMONARY ARTERY FLOW VELOCITY TIME INTEGRAL MEASURED BY ECHOCARDIOGRAPHY IN CANINE HEARTWORM DISEASE

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Pulmonary hypertension (PH) is a hemodynamic condition in which the pressure of the pulmonary arterial vasculature is elevated. It is a complex syndrome that usually occurs in dogs parasitized by *Dirofilaria immitis*. Damage to the pulmonary vasculature causes progressive and permanent changes in parasitized animals. Serious cardiorespiratory signs appear and require chronic treatment. The use of echocardiographic measurements for the estimation of PH in heartworm disease is essential, and new methods have to be implemented in order to improve the diagnosis and prognosis of affected dogs. The objective of this research was to evaluate the Tricuspid Regurgitation Velocity/Pulmonary Artery Flow Velocity Time Integral (TRV/VTI_{pa}) measurement in dogs parasitized by *D. immitis* to determine its efficacy in estimating the presence of PH.

In this study, 49 animals were selected between September 2021 and June 2022. A complete record was kept for each animal, including identification (age, sex, breed, and weight), body score condition (BSC), presence of respiratory symptoms and signs of congestive right heart failure (RCHF). 57,14% of the animals were diagnosed by a *D. immitis* circulating antigen test using a commercial diffusion immunochromatography kit, the rest of the animals (42,86%) were healthy control animals. The dogs were conscious, monitored and without the use of sedation or anesthesia throughout the echography exam. The absence or presence of PH was determined using the right pulmonary artery distensibility index (RPADi<29.5%). Pulmonary artery flow velocity time integral (VTI_{pa}) and tricuspid regurgitation velocity (TRV) were obtained with spectral wave Doppler in the right and left parasternal views, following previously published and validated protocols.

The study population were allocated into 3 groups depending on the presence of the disease and PH. The clinical data of the groups are presented in Table 1. The RPDi determined the presence of PH in 53,57% of the parasitized animals. There were no significant differences in body weight, BSC, and age among the dogs in the three groups. Significant results were observed in the presence of respiratory symptoms and signs of RCHF when the animals suffered from PH. All VTI_{pa} measurements were adjusted by BSA. There were significant differences in VTI_{pa}/BSA and (TRV/VTI_{pa})/BSA between groups (P<0,01), with higher values in the group of animals suffering from PH (0,92± 0,25 Vs 1,83±0,34).

In conclusion, it is suggested that TRV/VTI_{pa} could be included as a simple and non-invasive parameter to determine the presence of PH through routine echocardiographic examination in dogs suffering from heartworm disease. New studies are indicated to standardize protocols and obtain exact reference values.

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