EVALUATION OF INDIRECT BLOOD PRESSURE IN HORSES WITH AORTIC REGURGITATION

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Aortic regurgitation (AR) is common in middle-aged horses. Although, usually, AR degenerates slowly with minimal impact on athletic activity, horses with moderate/severe AR are at increased risk of sudden cardiac death due to ventricular arrhythmias. Therefore, when a horse is engaged in high-intensity competitive sports, it is important to evaluate the impact of AR on performance and to assess whether the horse is safe to ride. Moreover, it is mandatory to provide a correct prognosis about the progression of the disease [1]. It is reported that diastolic pressure in horses with severe AR results as low as 50 mmHg, and the pulse pressure is 60 mmHg greater than in horses with mild AR [2].

The aim of the present study is to evaluate whether systolic, diastolic and pulse pressure change accordingly to the severity of AR (mild, moderate and severe) or to the presence/absence of associated cardiac dilation. Indirect blood pressure was measured in 17 horses with AR, using an ultrasonic blood-flow technique [3]. In all subjects, standard 2D, M-mode and color flow Doppler echocardiography was performed. According to the echocardiographic findings, AR was classified as mild in 4 horses, as moderate in 9 horses and as severe in 4 horses. Moreover, echocardiographic dimensional changes associated with AR were found in 10 out of 17 horses. For statistical evaluation, one way and linear regression analyses were performed. Significant level was set at $P < 0.05$. Statistical analysis did not show any difference in blood pressure related to the severity of AR. However, the mean systolic (P-value = 0.0065) and diastolic pressures (P-value= 0.0036) were significantly higher in horses with cardiac dimensional changes. Our results suggest that the indirect measurement of blood pressure in horses with AR may provide useful information concerning the progression of the disease and the onset of cardiac dilation.

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