FACULTY OF VETERINARY MEDICINE
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Equine Cardioteam Ghent

NT-proBNP as a potential biomarker for diagnosis, prognosis and monitoring of cardiac disease in horses

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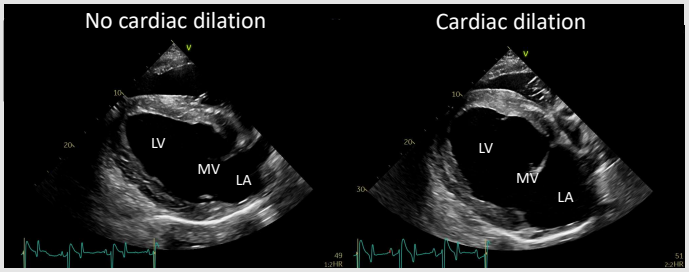
Introduction

Background: N-terminal pro-brain natriuretic peptide (NT-proBNP) is currently the biomarker of choice in human and canine cardiology for diagnosis, prognosis and follow-up of cardiac disease.

Aim of the study: To investigate whether NT-proBNP can be used as a diagnostic marker for cardiac dilation in horses.

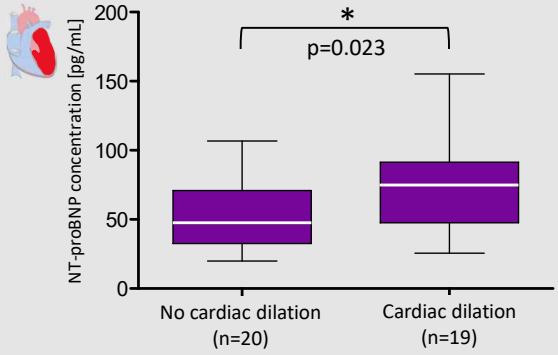
Materials and methods

- 20 healthy horses and 19 horses with cardiac dilation
  - Definition of cardiac dilation = left atrial and/or left ventricular 2D and M-mode echocardiographic measurements exceeding the upper reference range
  - Etiology of cardiac dilation = mitral/aortic valve regurgitation (n=16) or a ventricular septum defect (n=3)
- Serum samples were acquired and stored at -20°C
- The concentration of NT-proBNP was determined with the Horse NT-proBNP ELISA kit (MyBiosource Inc., San Diego, USA)



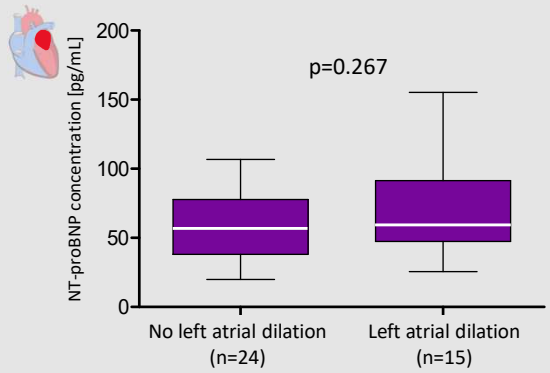
Echocardiography: right parasternal four chamber view. LA = left atrium; MV = mitral valve; LV = left ventricle.

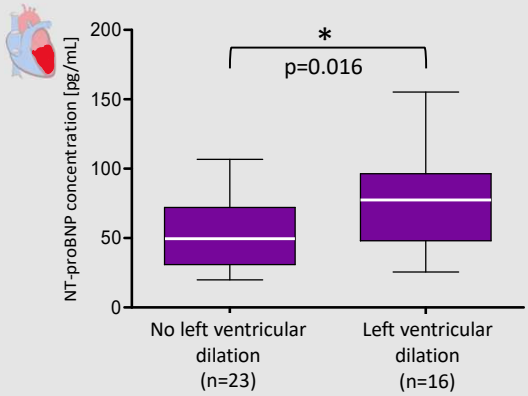
Results



Significantly higher NT-proBNP concentrations were found in horses with **cardiac dilation** compared to horses without cardiac dilation.

A separate analysis of horses with and without left atrial dilation and horses with and without left ventricular dilation, only showed **significantly higher NT-proBNP concentrations** in horses with **left ventricular dilation**.





Conclusion

- The concentration of NT-proBNP differed significantly between horses with and without left ventricular dilation.
- Further research in a larger group of horses with cardiac disease is needed to establish cut-off values for cardiac dilation and to evaluate the usefulness of NT-proBNP to estimate long-term prognosis.

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