and ultrasound examination of the lung. In the first study, doxycyclin was evaluated as an alternative to a macrolide. Foals with ultrasonographic evidence of pulmonary abscesses 5.0-10 cm in diameter (n = 108) were randomly allocated in five treatment groups: 1) tulathromycin IM; 2) doxycycline monotherapy orally; 3) doxycycline with rifampin orally; 4) azithromycin with rifampin orally and 5) saline IM as a placebo. Physical examination and thoracic ultrasonography were performed weekly by individuals unaware of treatment group assignment. Foals that worsened were removed from the study and treated with azithromycin-rifampin. Three foals in the DOX-RIF group developed severe hemolytic anemia and icterus 17-20 days after initiating therapy. Overall, 22/25 (88%) foals in the placebo group recovered without the need for therapy, 24/24 (100%) of the Doxycyclin group, 19/25 (73%) of the Tulathromycin group, 20/21 (95%) of the Rifampin/Azithromycin group recovered without the need for change of therapy. The proportion of foals that worsened did not differ significantly between treatment groups. Although the median duration of therapy was significantly shorter in foals treated with azithromycin-rifampin (46 days) compared to foals treated with the placebo (73 days), the kinetics ultrasonographic lesion resolution did not differ significantly between treatment groups. In the second study, doxycyclin was evaluated as an alternative to rifampin. In a controlled, randomized, and double blinded clinical trial, foals with ultrasonographic pulmonary lesions (lesion score 10-15 cm) were allocated to 3 groups: azithromycin-doxycycline orally (n = 81); azithromycin-rifampin orally (n = 81); or untreated controls (n = 78). Physical examination and thoracic ultrasonography were performed by individuals unaware of treatment group assignment. Foals that worsened were considered treatment failures and removed from the study. The proportion of foals that recovered was significantly higher for foals treated with azithromycin-doxycycline (80 of 81) or azithromycin-rifampin (81 of 81) compared to that of control foals (57 of 78). The difference in the percentage of efficacy of azithromycin-rifampin versus azithromycin-doxycycline was 1.2% (90% CI = −0.78 to 3.5%) which did not cross the predetermined noninferiority limit of 10%. Therefore, azithromycin-doxycycline was noninferior to azithromycin-rifampin within the predetermined noninferiority limit. The antimicrobial combination Rifampin/Doxycyclin cannot be recommended as in 9 foals of the Rifampin/Doxycyclin group three developed a severe hemolytic anemia and one died of it. As presently some reflection rise on the use of Rifampin, because of its use in critical human diseases as tuberculosis, an alternative was investigated. Our results show that doxycyclin in combination with azithromycin is a good treatment option in foals with R. equi moderate pneumonia.

Keywords: antimicrobials, doxycycline, treatment protocols

Intrathoracic pressure measurement in horses during exercise: Validation of the wireless equivent 300 device

Cornélie M. Westermann[1], Roan R. Bruinsma[1], Hanneke H.J. Balder[1], Fleur Schipstra[1], Kimberly J. Jonkers[1], Siebren Boerma[2]

[1]*Department of Equine Sciences, Faculty of Veterinary Medicine, Utrecht University, The Netherlands;* [2]*Paardenkliniek Garijp, The Netherlands*

Low-grade respiratory disease is a potential cause for reduced athletic performance. Increased intrathoracic pressure amplitude (IP) indicates impaired respiratory function but measurements at rest are insensitive diagnostics to abnormally elevated respiratory effort during exercise. A purpose-designed device (Equivent 300) for continuous telemetric measurement of IP during exercise was validated and reference ranges of exercising IP in warmblood horses were established.

Twenty healthy Dutch warmblood mares underwent resting IP measurements using a standard method and the Equivent. With the device in place, horses underwent a standardized lunging exercise test (four minutes trot, four minutes canter, five minutes trot, five minutes' walk) on four consecutive days. Heart rate and mean IP for each stage and ambient temperature and humidity for each session were recorded. All data were checked for normality and a mixed linear model was used to determine mean IP for each stage and the intraclass correlation coefficient (ICC) of IP for each stage with horse, SET stage, and session as explanatory variables. Reference values were calculated as mean IP ± 2SD.

The device was well tolerated by the horses. There was no significant effect of session day; the ICC for 'horses was 0.11 and the ICC for 'stage' was 0.77. Mean IP was 21.1 ± 4.9 (ref 11.4-30.9), 33.9 ± 7.9 (ref 18.2-49.7), 24.3 ± 5.6 (ref 13.1-35.6) and 10.5 ± 3.1 (ref 4.3-16.6) cm H2O for trot-1, canter, trot-2 and walk respectively. Reliable telemetric exercising IP measurement is possible but swallowing, coughing, head- and neck position, location of the esophageal balloon, G-force associated with locomotion were possible artifact-causing factors.

Amiodarone during transvenous electrical cardioversion of atrial fibrillation in horses to reduce cardioversion threshold or prevent immediate recurrence

Ingrid Vernemmen[1], Zoé Neuckermans[1], Annelies Decloedt[1], Gunther van Loon[1]

[1]*Equine Cardioteam, Department of Large Animal Internal Medicine, Faculty of Veterinary Medicine, Ghent University, Merelbeke, Belgium*

Amiodarone, a class III anti-arrhythmic drug, has been used in equine and human medicine to treat atrial fibrillation (AF). The aim of this retrospective study was to report the effect of amiodarone administered IV during transvenous electrical cardioversion (TVEC) in case of failure to restore sinus rhythm (SR) or immediate recurrence of AF (IRAF). Data from 11 Warmblood horses with AF receiving amiodarone (5 mg/kg over 30 minutes) during the TVEC procedure were reviewed. Mean age was 9.5 years. AF duration varied from two weeks to 1.5 year. Mild, moderate or severe mitral (n = 8), tricuspid (n = 10) and aortic (n = 4) valvular regurgitations were present. Five horses had left atrial dilatation. TVEC was performed using 'Guelph'