Evaluation of Ultrasonographic Screening Parameters for Predicting Subsequent Onset of Clinically Apparent *Rhodococcus Equi* Pneumonia in Foals

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Subclinical, sonographically visible lung consolidations are highly prevalent in foals. In most foals, such consolidations resolve without therapy or onset of clinically apparent pneumonia. Ultrasound screening parameters have good sensitivity but relatively weak specificity for predicting subsequent onset of clinically apparent *Rhodococcus equi* pneumonia. Authors' addresses: Texas A&M University, College of Veterinary Medicine, College Station, TX, 77843 (Chaffin, Cohen); 6666 Ranch, PO Box 130, Guthrie, TX, 79236–0130 (Blodgett); PO Box 1523, Basalt, CO 81621 (Syndergaard); e-mail: kchaffin@cvm.tamu.edu. *Corresponding and presenting author. © 2013 AAEP.

1. Introduction

The objectives of this study were to estimate the sensitivity and specificity of three ultrasonographic screening parameters (sequential measurements of pulmonary consolidations including total maximal diameter [TMD], total cross-sectional area [TCSA], and total number of consolidations [TNC]) for predicting subsequent onset of clinically apparent *Rhodococcus equi* pneumonia.

2. Materials and Methods

Foals (n = 270) were studied at an *R equi*–endemic farm. Foals were screened sonographically every 2 weeks from 3 to 19 weeks of age. Farm personnel were blinded to screening results. Foals were not treated with antimicrobials unless they demonstrated clinical signs of pneumonia. Tracheobronchial aspirates were obtained from all pneumonic foals.

3. Results

Two hundred sixteen (80%) foals had development of sonographically visible pulmonary consolidations. Consolidations resolved without treatment or clinical illness in 79% of these foals; 17% of the 270 foals had development of clinically apparent *R equi* pneumonia. Cumulative sensitivities for TMD (cut-point of ≥200 mm), TCSA (cut-point of >100 mm²), and TNC (cut-point of ≥2) were 89%, 91%, and 78%, respectively. Respective cumulative specificities were 62%, 54%, and 64%.

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Research Abstract

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4. Discussion

Subclinical lung consolidations are highly prevalent in foals. In most foals with lung consolidations, the lesions resolve without clinically apparent illness or treatment. Ultrasonographic screening parameters have good sensitivity but relatively limited specificity for predicting which foals will progress to clinically-apparent *R equi* pneumonia.

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