Evaluation of Hematologic Screening Methods for Predicting Subsequent Onset of Clinically Apparent Rhodococcus Equi Pneumonia in Foals

M. Keith Chaffin, DVM, MS, Diplomate ACVIM*; Noah D. Cohen, VMD, MPH, PhD, Diplomate ACVIM; Glenn P. Blodgett, DVM; and Melissa Syndergaard, DVM

Hematologic screening parameters have poor sensitivity and poor specificity for predicting subsequent onset of clinically apparent Rhodococcus equi pneumonia. Practitioners at R equi–endemic breeding farms should be aware of these limitations of hematologic screening. 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
Hematologic parameters, including white blood cell concentration (WBC) and fibrinogen concentration (FC), are commonly used at endemic breeding farms to screen for early detection of Rhodococcus equi pneumonia in foals. The objectives of this study were to estimate the sensitivity and specificity of three hematologic screening methods (sequential measurement of WBC, neutrophil concentration [NC], and FC) for predicting subsequent onset of clinically-apparent R equi pneumonia.

2. Materials and Methods
Foals (n = 270) were studied at an R equi–endemic farm. Foals were screened hematologically 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 pneumatic foals.

3. Results
Seventeen percent of foals had development of clinically apparent R equi pneumonia. Cumulative sensitivities for WBC (using a cut-point of ≥13,000/μL), NC (cut-point of ≥10,000/μL), and FC (cut-point of ≥600 mg/dL) were 59%, 50%, and 59%, respectively, for predicting subsequent onset of clinically-apparent R equi pneumonia. Respective cumulative specificities were 37%, 55%, and 33%.

4. Discussion
Hematologic screening parameters demonstrated limited performance for predicting subsequent onset of clinically apparent R equi pneumonia in foals.

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