Research Summaries I

Changes in Behavior and Clinical Illness Scores in Calves after Induction of *Mycoplasma bovis* Pneumonia

D.E. Amrine[1], *DVM;* **B.J. White**[1], *DVM, MS;* **D.E. Anderson**[1], *DVM, MS, DACVS;* **R.L. Larson**[1], *DVM, PhD;* **D. Mosier**[2], *DVM, PhD;* **D.G. Renter**[2], *DVM, PhD*
[1]*Department of Clinical Sciences, College of Veterinary Medicine, Kansas State University, Manhattan, KS 66506*
[2]*Diagnostic Medicine/Pathobiology, College of Veterinary Medicine, Kansas State University, Manhattan, KS 66506*

Introduction

Bovine respiratory disease is one of the most costly cattle diseases, and *Mycoplasma bovis* is increasingly recovered from calves having this syndrome. Respiratory disease is difficult to accurately identify based on clinical signs alone. Cattle alter their behavior when ill, and an improved understanding of behavioral changes could improve detection of affected cattle. The objective of this study was to quantify changes in cattle behavior patterns prior to and after *Mycoplasma bovis* challenge, and to evaluate potential associations of these changes with clinical illness scores and severity of pulmonary lesions.

Materials and Methods

Twenty-four male Holstein calves were fitted with remote monitoring tags that continuously transmitted calf location within the pen. Time spent at each of the pen locations (within 1 ft ; 0.3 m of the water, feed bunks, and shelter) and the distance each calf traveled was calculated. Calves were challenged with *M. bovis* by respiratory inoculation and monitored for 14 days post-challenge. Clinical illness scores (CIS), changes in behavior patterns, and extent of post-mortem lung lesions were evaluated.

Results

All calves became ill (CIS >1) by the end of the trial and the median lung lesion score was 2.6% (range: 0% to 49.8%). Calf behavior changed following disease challenge and some measures of time calves spent in specific locations and calf activity, including distance traveled, were associated with clinical illness scores and severity of lung scores.

Significance

An improved understanding of cattle behavioral changes related to systemic illness may be beneficial in creating objective criteria to improve monitoring and identification of clinically ill cattle.

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