Development of an Equine Proliferative Enteropathy Challenge Model

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An experimental challenge model for *Lawsonia intracellularis* was developed. Two new forms of equine proliferative enteropathy were identified: subclinical and acute. Authors’ addresses: University of Kentucky Maxwell Gluck Equine Research Center, Lexington, Kentucky 40546 (Page, Horohov); University of Kentucky Livestock Disease Diagnostic Center, Lexington, Kentucky 40511 (Loynachan, Bryant); Department of Veterinary Biomedical Sciences, University of Minnesota, College of Veterinary Medicine, St. Paul, Minnesota 55108 (Gebhart); and Department of Medicine and Epidemiology, School of Veterinary Medicine, University of California, One Shields Avenue, Davis, California 95616 (Pusterla); e-mail: Dwhoro2@uky.edu. *Corresponding author. © 2010 AAEP.

1. Introduction
*Lawsonia intracellularis* is the causative agent of equine proliferative enteropathy (EPE), an emerging disease of horses that can have a significant financial impact. Although weanlings are considered primarily at risk for EPE, other ages can be affected. Most of our understanding of this disease comes from work on porcine proliferative enteropathy because of the lack of an experimental infection model in the horse. The purpose of this study was to experimentally induce EPE in weanlings.

2. Materials and Methods
Six weanling ponies were inoculated with low-passage, equine-origin *L. intracellularis*. Clinical disease was confirmed using available, routine diagnostic techniques and postmortem findings. Fifteen additional ponies were used as serological controls.

3. Results
All six weanlings seroconverted after challenge. Overall, four weanlings were diagnosed with EPE based on the presence of compatible clinical, clinicopathological, and/or histological signs. Whereas two weanlings showed signs of classical EPE, another showed clinical signs and histological changes compatible with “acute EPE,” and one exhibited signs of subclinical disease.

4. Discussion
To the best of the authors’ knowledge, these are the first results published from a *L. intracellularis* challenge in equids with infection confirmed by post-mortem examination. This study found that EPE, like porcine proliferative enteropathy, can exhibit three clinical forms: classical, subclinical, and acute.

Reference