Variation of *VapA*-Specific Immunoglobulin G in Mares and Foals on Different Farms in Kentucky

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Mares have overall low *VapA*-specific immunoglobulin (Ig) G regardless of the *Rhodococcus equi* incidence on the farm. Foals are exposed to *R equi* within the first month of age. Authors’ address: Maxwell H. Gluck Equine Research Center, Department of Veterinary Science, University of Kentucky, Lexington, KY 40546–0099; e-mail: sanzmaca@gmail.com. *Corresponding and presenting author. © 2013 AAEP.

1. Introduction

*Rhodococcus equi* causes pneumonia in young foals and major economic losses to the horse industry. Our objective was to evaluate serum *VapA*-specific immunoglobulin (Ig) G in mares and foals from farms that administered *R equi*–specific hyperimmune plasma and farms that did not administer the plasma.

2. Materials and Methods

Serum from mare and foal pairs from four farms in Kentucky was evaluated for *VapA*-specific IgG with the use of enzyme-linked immunoassay. Blood was collected at foaling (mare and foal) and for a period of 5 to 6 months thereafter (foals).

3. Results

A total of 161 pairs of serum were included: 121 from a farm that used hyperimmune plasma and 40 from three farms that did not use the plasma. The level of *VapA*-specific IgG of the mares was overall low and was not significantly different between farms. Foals given hyperimmune plasma had significantly higher *VapA*-specific IgG than untreated foals. All foals had an increase in *VapA*-specific IgG over time. Only moderate correlation between *VapA*-specific IgG between mares and foals was observed when plasma was not given.

4. Discussion

The moderate correlation between mare and foal *VapA*-specific IgG may explain why vaccination of mares has not always been effective in preventing *R equi* infection. Foals produced *VapA*-specific antibodies after the first month of age, which strongly suggests that *R equi* exposure occurs early in life.