Protection Against EHV-1 Challenge by Inactivated Vaccines

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Vaccination against EHV-1 is unlikely to provide complete virological and clinical protection, independent of product choice or vaccination priming schedule. Products producing the highest viral neutralization titers may offer advantages in terms of virological protection. Authors’ addresses: Department of Clinical Sciences, College of Veterinary Medicine and Biomedical Sciences, Colorado State University, 300 West Drake Road, Fort Collins, CO 80523 (Lunn, Sellers, Goehring, Hussey); Western College of Veterinary Medicine, University of Saskatchewan, Saskatoon, SK, Canada S7N 5B4 (Townsend); Boehringer Ingelheim Vetmedica, Inc., 5506 Corporate Drive, Suite 1600, St. Joseph, MO 64507-7752 (Tuttle and Stenbom). e-mail: lunnp@colostate.edu. *Corresponding author. © 2011 AAEP.

1. Introduction
EHV-1 is a cause of outbreaks of abortion and neurological disease. An experiment was performed to determine the protective efficacy of two commercially available killed vaccines used with an optimized three-dose vaccination regime. The study design was a blinded, randomized challenge trial.

2. Materials and Methods
Three groups of 10 ponies, starting at 24 months of age, received one of three treatments: Vaccine 1a, Vaccine 2b or a placebo (control group). Three treatments were administered at intervals of 21 and 92 days, followed by challenge infection 29 days later with EHV-1. Clinical signs, virus shedding, and viremia were studied for 14 days after challenge. Serological responses were studied for the entire experimental period. Statistical comparisons were made using nonparametric analyses, with statistical significance reported at p < 0.05.

3. Results
Vaccinated ponies generated virus-neutralizing antibody responses to EHV-1, which were significantly greater in the Vaccine 1 > Vaccine 2 > control group. Clinical signs of disease were moderate, with no difference among the groups. There was a trend for lower viral shedding in the vaccinated groups, but this was not significant. Viremia occurred in all three groups and was significantly less
in the Vaccine 1 group in comparison to the Vaccine 2 group and controls.

4. Discussion
This challenge experiment did not produce extensive signs of clinical disease. We speculate that the age of the ponies may have been a factor in this outcome. Evidence of virological protection was principally confined to a reduction in viremia, which was associated with a very high level of seroconversion for one of the vaccines.

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Footnotes

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