Herpesvirus Vaccination Recommendations

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The following vaccination recommendations for equine herpesvirus-1 (EHV-1) were made by Julia Wilson, DVM, Dipl. ACVIM, associate professor of Veterinary Population Medicine at the University of Minnesota. There is some debate among researchers and veterinarians on which vaccine (modified live or killed) is best. Wilson reminds horse owners that no vaccine completely prevents disease, and vaccinated animals can still transmit the disease to others, so other disease prevention strategies (such as quarantine and good hygiene) should always be employed.

EHV vaccines currently on the U.S. market are: Calvenza EHV and CalvenzaEIV/EHV (killed virus, aka inactivated, from Boehringer Ingelheim); Pneumabort K (inactivated from Fort Dodge); Prodigy with Havlogen, Prestige, Prestige II, and Prestige V with Havlogen (all inactivated from Intervet); Fluvac Innovator EHV-4/1 and Fluvac Innovator Triple-E FT+EHV (inactivated from Ft. Dodge); and Rhinomune (modified live virus from Pfizer). No vaccines are labeled against the neurologic form of EHV-1.

Zylexis (Parapox Ovis virus vector) from Pfizer is an immunomodulator licensed to diminish clinical illness, particularly respiratory signs, from EHV-1 and -4 infections when administered prior to exposure and during disease incubation.
Following are some of the points to the debate:

1. In the case of EHV-1, data from Cornell University suggests that horses vaccinated with Rhinomune will have significantly lower nasal shedding of EHV-1 virus after being infected with EHV-1 than horses vaccinated with an inactivated vaccine. This mighty be important in limiting the spread of the virus.

2. Modified live vaccines generate two types of immunity--humoral (just antibody) and cell mediated (lymphocytes). (The recombinant vaccines using vectors also stimulate both types of immunity.) Killed vaccines generate antibody only, which might not offer enough protection when the horse is faced with a strong challenge.

3. Modified live vaccines tend to create a stronger reaction by the vaccinated animal, so some individuals might have a greater risk of vaccine reactions (not disease) when a modified live vaccine is used. This risk has made some veterinarians and horse owners leery of modified live vaccines when a high risk of that particular disease is not anticipated. Timing is also important to avoid having signs of mild illness right before shipping or a major event.

4. Duration of measurable immunity in challenge studies tends to be longer with vaccines that create cell mediated immunity (modified live and vector).

5. Vaccination of animals in the face of exposure is very controversial and should be made on a case-by-case basis.
For exposed horses that might be incubating the disease, it is probably too late to vaccinate or booster. The vaccine doesn't have enough time to give protection before the virus replicates. Minimizing stress and possibly using immunomodulators might make more sense. Zylexis (from Pfizer) has a label claim for EHV-1 and -4 respiratory disease, but it is intended for pre-exposure use.

If the farm is such that there is clear division between exposed and unexposed populations, then more veterinarians will consider vaccinating the unexposed animals on the same farm. Guidelines from the American Association of Equine Practitioners for outbreak control suggest perimeters of biosecurity precautions, vigilance over the already exposed, and vaccination of those that are not exposed, but at risk. That being said, all of the vaccines take a while to ramp up the immune system. One should not expect a single dose of vaccine to be as efficacious as two doses of vaccine given at the appropriate interval.

6. Sick horses should not be vaccinated, in my opinion.

Vaccination data from the Findlay, Ohio, outbreak showed a trend that suggests horses given frequent vaccination with the killed vaccine could have increased risk of becoming a neurologic case, but it was not statistically significant.

Further reading:

"AAEP Convention 2005: Vaccine Efficacy and Controversies" by Stephanie L. Church, http://www.thehorse.com/ViewArticle.aspx?ID=6579&kw=julia%20wilson.

"Can Immunomodulators Help Herpesvirus Victims?" by Kimberly S. Brown, http://www.thehorse.com/ViewArticle.aspx?ID=6582

"Equine Herpesviruses-1 and -4" by Nancy S. Loving, DVM
http://www.thehorse.com/ViewArticle.aspx?ID=5751&dpt=6&nID=6&n=Equine%20Herpesvirus%20(EHV)&case=2