Herpesvirus Management Basics

BY KIMBERLY S. HERBERT

COURTESY DR. DAVID POWELL

There are basic tools a farm, stable, or barn manager can use to reduce the incidence of equine herpesvirus outbreaks, and to moderate their effects if they do occur. The first is consistent quarantine of appropriate horses.

What this means is that there are some animals at higher risk of either carrying the active virus and spreading it, or becoming stressed and causing the latent virus to reactivate. There are also certain required situations—such as weaning—that cause stress, thus should be handled with an eye toward making them as stress-free as possible.

Rob Holland, DVM, PhD, a private practice veterinarian from Lexington, Ky., who also works as a consultant for Pfizer Animal Health, has been in a good position to learn about managing groups of horses to maximize health. Not only does he have clients that own major Thoroughbred breeding farms and racing stables, but he has worked as a Racing Commission veterinarian at tracks in Kentucky, and he grew up around horses.

Holland, who earned his PhD in veterinary science with an emphasis in infectious diseases at the University of Kentucky's Gluck Equine Research Center, has consulted on several of the major neurologic equine herpesvirus outbreaks in the past couple of years. This has added to his understanding of managing this disease.

Quarantine

This simple procedure is often overlooked in the normal life of moving horses around for competition. It specifically presents a problem to racetracks, show facilities, sale barns, etc., because horses are stressed by shipping into the facilities. That stress can cause the reactivation of equine herpesvirus that is latent in a seemingly health horses; it has no clinical signs that indicate it could present a problem.

In fact, when herpesvirus reactivates in some horses, they don't show clinical signs, but they are spreading the virus despite appearing healthy.

In one outbreak Holland helped with, he said three horses became neurologic, 10 had fevers with no other clinical signs, and 30 had no clinical signs, but some were shedding herpesvirus.

Because of these "silent" shedders, it's impossible to know which horses are going to pass along herpesvirus. However, there are some horses that are at higher risk:

1) Weanlings.

2) Young horses going into training or showing.

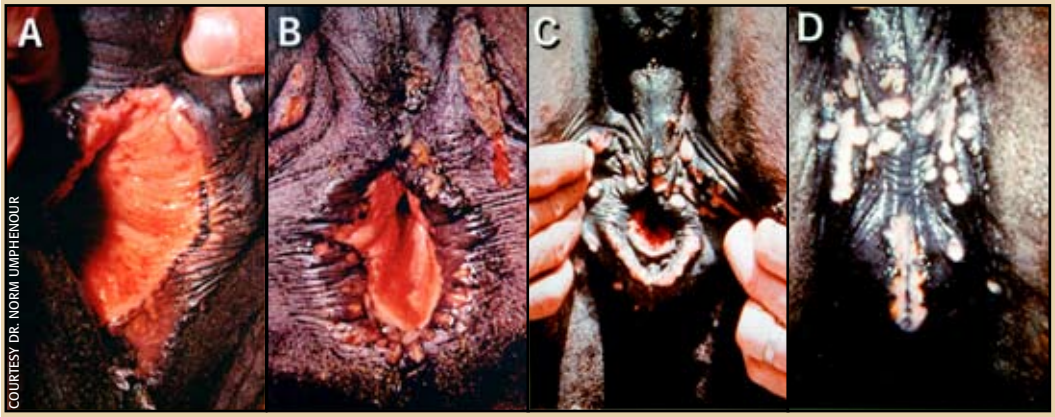
3) Horses in stables where young horses are coming in for training or showing.

4) Broodmares who are mixed in with young horses off the track.

5) Older horses in stables where there is much movement in and out of new horses, or stress from re-mixing of fieldmates.

Daily or twice daily recording of

STAGES OF EHV-3



COURTESY DR. NORM UMPHENOUR

EHV-3 can cause equine coital exanthema in stallions and mares. A: First signs of EHV lesions in a mare. B: Lesions progress. C: Begin to heal, these are still transmissible. D: Scars left from EHV-3 infection. Below: Lesion on penis.

temperatures can alert managers to horses that are developing problems. Isolating horses with fevers immediately can often stop a contagious disease in its tracks. That quarantine, however, should be away from all other horses, not just in the end stall of the barn. (Using the end stall is better than having a sick horse in the middle of the barn, however.)

A handler should take care of sick horses last. The handler should have a separate set of clothing, boot covers, and a place to wash his/her hands with soap and water. Sick horses should have their own water buckets, feed tubs, grooming equipment, and cleaning equipment that is disinfected each day and not allowed to be in contact with other horses.

The stall from which the sick horse was moved should be cleaned of all organic matter, washed down with soap, then disinfected.

ANNE EBERHARDT

Daily or twice-daily recording of temperatures, especially for at-risk horses, is a good management tool to catch contagious disease early.

Mixing Horses

This is never a good idea, no matter the disease you are trying to prevent. If possible, keep horses new to the stable or barn in a separate location for two weeks and monitor temperatures twice a day.

In real-life situations, however, this often isn't a possibility. Horses going to shows or racing stables have limited and assigned stabling. So what's a manager/trainer to do?

Keeping a new horse at the end of the barn is better than nothing. Follow the procedures outlined above. If these measures are done half-way, they are of no value in trying to avoid disease spread. Keeping feed and water buckets for designated horses won't keep disease from spreading if you use the same pitchforks, brooms, bits, etc. for the new horse's before using them on the rest of the stable.

On breeding farms, never mix horses from the track with your pregnant broodmares. That's asking for trouble. If you have limited turnout, keep new horses separated from pregnant mares for at least two weeks and check temperatures twice a day.

If a mare aborts, quickly clean up and disinfect the area where the fetus and membranes were located. Keep other horses away from the area. Place the fetus and membranes in a plastic bag and take them to your local diagnostic lab to determine the cause of abortion.

If you work in a breeding shed, know the

MANAGEMENT

Boosting the Immune System

Pfizer Animal Health on Feb. 8 announced the release of Zylexis in the United States, which according to the company's research prepares the horse's immune system to function more efficiently against equine herpesvirus-1 and -4 (EHV-1 and EHV-4) pathogens. The immunomodulator is offered specifically as an aid in reducing upper respiratory disease caused by these EHV -1 and -4.

Zylexis is created with an inactive (killed) preparation of parapox ovis virus. This product has been used for eight years by equine vets in Germany, where it was proven safe and effective, said Pfizer.

While an immunomodulator can't prevent a horse from contracting a disease, it's designed to help reduce the severity of upper respiratory signs the horse can suffer after it is exposed.

"It won't stop EHV-1 or -4, but our study shows that it can limit the severity and duration of symptoms," said Robert Holland, DVM, PhD, a private practice veterinarian and a consultant for Pfizer Animal Health. This product provides practitioners with a valuable tool to help horses deal with EHV-1 and -4 pathogens they might encounter in a show and stable environments." For more information see www.TheHorse.com/emag.aspx?id=6582.

Human and animal scientists have been researching ways to stimulate the immune system in order to prevent or mitigate disease, especially just prior to or during stressful events. Options include vaccination, antimicrobial therapy, and immunomodulation (altering the immune system).

Product Research Two yearlings studies using EHV-1 and -4 as a challenge to determine if using Zylexis helped the yearlings either avoid illness or reduced clinical signs. Both EVH-1 and -4 can cause respiratory problems. EHV-1 also can cause abortion, and a mutated form of that virus can cause neurologic disease.

The respiratory form of EHV-1 and EHV-4 were used to challenge the yearlings. Half of the 53 yearlings studied were treated with Zylexis on days zero, two, and nine prior to being exposed to the virus, and again treated two and five days after challenge. Daily temperatures and nasal exudate scores were noted, daily blood samples were obtained for white blood count assays, and nasal swabs were used for virus isolation.

Virus isolation showed all horses exposed to the virus were positive for herpesvirus starting two days after exposure. Both treated and non-treated horses were infected, had fevers, and had higher white blood cell counts, but treated horses were "less sick," he said.

Compared to placebo controls, Zylexis-treated horses had a 40.3 percent reduction in clinical disease scores and a 57.7 percent reduction in incident of purulent nasal discharge, a key indicator of EHV respiratory disease complicated by bacterial involvement.

Zylexis-treated horses also had fewer and less-severe secondary bacterial infections.

Holland said giving the immunomodulator two weeks before a stressful event—horse show, sale, traveling, etc.—would be the best management protocol. "This product has been used for eight years in Germany," said Holland. "It won't stop EHV-1 or -4, but it can limit the severity of respiratory symptoms, as shown by total nasal exudate scores." *(Reprinted from TheHorse.com, February 2006.)*

clinical signs of equine coital exanthema (caused by EHV-3) and what it looks like on stallions and mares, and have all workers be on the lookout for those clinical signs.

During an Outbreak

If a horse is diagnosed with herpesvirus (especially EHV-1 with its potential for neurologic disease), good nursing care of the individual is important.

It is also important to isolate that horse from other horses in order to avoid spread of the disease. The horse should be moved to a location without other horses or housed only with other sick horses. His stall, buckets, grooming tools, etc., should be cleaned and disinfected.

It is not known how far herpesvirus can be spread in the air. While 35 feet has been cited, veterinarians have noted that without other horses in a barn, a sick horse can spread the virus to the other end of the barn.

Horses should be kept in quarantine a minimum of three weeks after the last clinical signs, then test negative for active infection. This means nasal swabs and blood should be tested.

COURTESY DR. NORM UMPHENOUR

It's important to practice sterile technique when working with multiple horses. Because the lesions are surrounding the rectal area of this horse, it is possible the virus was spread from a person palpating one mare, then performing a rectal exam on this mare without changing sleeves (gloves).

ANNE EBERHARDT

Fetal fluids and membranes can spread the herpesvirus, so care should be taken to avoid human spread of the virus, and to thoroughly clean and disinfect foaling stalls and utensils.

Testing

If horses develop respiratory disease, it would behoove the trainer/manager/owner to invest in testing to see what is causing the problem. If it is EHV-1, then steps need to be taken to isolate that horse and vaccinate others that are not up to date on their immunizations.

Catherine Kohn, VMD, PhD, Dipl. ACVIM, professor in the Department of Veterinary Clinical Sciences at The Ohio State University, in a previous article on herpesvirus made the following suggestions.

What is the treatment for EHV-1 neurologic disease?

1. The antiviral drug Acyclovir has been used empirically, but efficacy is unknown. There are anecdotal reports of successful treatment. Blood concentrations of the drug have been measured in five horses being treated with acyclovir (during an Ohio outbreak).

2. Symptomatic treatment: anti-inflammatory drugs (butazolidin, banamine, DMSO, corticosteroids); nursing care, sling if needed.

How often is treatment for the neurologic disease successful?

1. In most outbreaks, horses that remain standing have a good prognosis for life. Full recovery may take weeks, months, or years.

2. Horses that display profound and rapidly progressive neurologic deficits have a much poorer prognosis, although some may live with intensive care.

3. The incidence of permanent neurologic deficits in recovered horses is unknown.

Editor's note: George Allen, PhD, head of the OIE Herpesvirus Reference Laboratory at the Gluck Equine Research Center, acted as a scientific resource in this article.

Blood is placed in green- or purple-top heperinized tubes to be tested for EHV.

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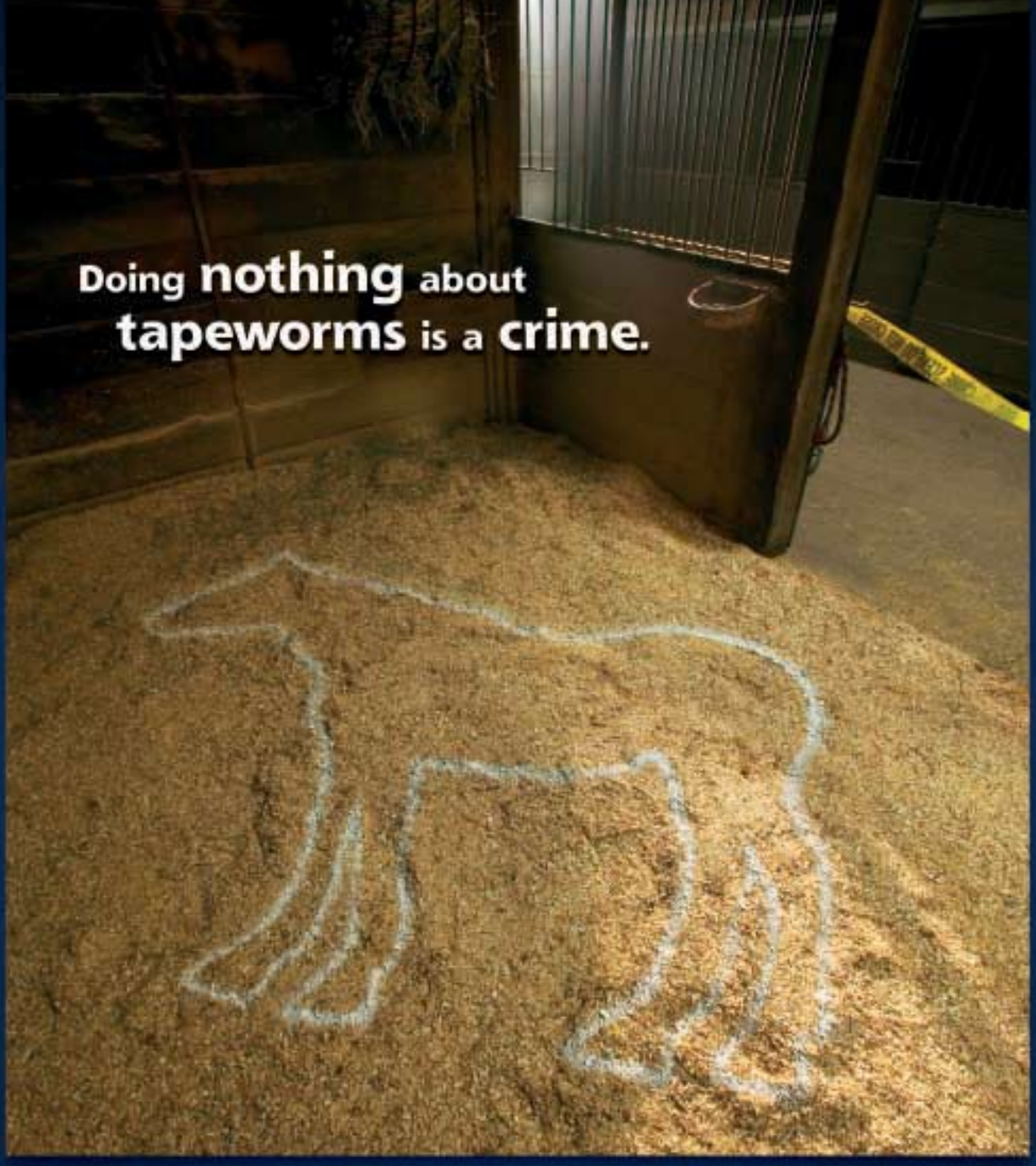

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*C.R. Reinemeyer, A.W. Farley, S.A. Kania, B.W. Rohrbach, R.H. Dressler,
48th Annual Meeting of the American Association of Veterinary Parasitologists, Denver, CO, July 2003.