

Equine Herpes Virus

Equine herpes virus (EHV) is a virus highly infectious to horses. There are four forms of EHV which cause disease in horses.

- EHV-1: Respiratory, abortion, and neurologic syndrome
- EHV-2: Respiratory
- EHV-3: Coital exanthema
- EHV-4: Respiratory

EHV-1 and EHV-4, causing rhinopneumonitis, are the forms of greatest concern in performance horses. The two virus forms have genetic differences, which result in a variation in the degree of virus invasion of the respiratory tract. Additionally, EHV-1, occasionally results in outbreaks of neurologic disease. **The neurological manifestation of EHV-1 is also referred to as Equine Herpes Myeloencephalopathy (EHM).** There is a high infection rate with both forms in young horses that travel frequently and intermingle with other young horses. Estimates indicate 50-75% of horses under two years of age have been infected with at least one of the respiratory forms of EHV. Treatment is supportive and antivirals have been used with mixed success.

Clinical Signs

Infection with EHV-1 may result in clinical illness ranging from mild clinical manifestations of respiratory disease to occasional cases of severe neurogenic disease. Signs may include:

- Fever in excess of 102° F
- Neurological signs, such as decreased coordination, hind limb weakness, and inability to rise
- Lethargy
- Decreased appetite



Stress and lack of previous exposure to the virus may make the horse more susceptible to becoming clinically affected.

Transmission

EHV-1 infected horses, whether clinically ill or not, may periodically shed both active and nonreplicating (dead) virus in their nasal secretions. If the virus being shed is active, these horses have the potential to spread the virus to other horses. Horse-to-horse contact, contaminated hands, equipment, tack, feed, and aerosol transmission all play a role in its spread.

It is felt that horses with severe clinical signs of neurological EHM illness often have very large viral loads in both their blood and nasal secretions. These high viral loads are thought to be a significant aspect in the transmission of the disease to exposed horses. Therefore, it is very important to separate and isolate identified suspect cases.

Prevention

Since this virus can be spread from horse to horse via contaminated objects such as water/feed buckets or bridles, equipment should not be shared among horses. Proper biosecurity measures should also be practiced to prevent people from spreading the virus. Since people can transfer this virus from horse to horse via their hands and clothing, personnel should wash their hands after handling one horse and before handling another. They should also change their clothes and footwear after working with a sick horse. Optimally, a person who takes care of a sick horse should not work with healthy horses. When this is not practical, healthy horses should be handled first and sick horses last. Wearing gloves and using disinfectant to sanitize footwear can also help minimize the risk of people spreading the virus between animals.

As with all contagious diseases, if horses are commingled with strange horses, an unknown degree of inherent risk exists for exposure to EHM. Many factors may enhance or reduce the amount of risk. If the choice is made to commingle with a population that has the potential to harbor EHM infected individuals, there is no foolproof way to completely eliminate the risk of exposure. The good news to date is that most horses recently known to have had exposure to incubating EHM horses have not developed clinical disease.

If horses are exposed to new horses, especially in stressful competitive environments or following long distance travel, it is helpful to establish a disease-monitoring plan under the advice of a veterinary

practitioner. Temperature monitoring (2x / day) is a tool to be used for a differential diagnosis that could include EHM. Currently, there is no equine vaccine that has a label claim for protection against the neurological strain of the virus.

It is virtually impossible at this time to know if horses in our native population have ever been naturally exposed to recently diagnosed strains of EHV-1 and whether these individuals develop any subsequent immunity to the virus.

Testing for EHM

The predictive value and significance of results for diagnostic testing (PCR test), in the absence of clinical disease consistent with EHV-1, are uncertain at this time. However, this testing is useful as an adjunct to diagnosis in the presence of clinical disease consistent with EHM.

In addition to clinical signs, EHM diagnostics include whole blood sample and nasal swabs for PCR and virus isolation, which may be submitted to the following laboratories. If you have further questions about EHM testing, refer to Web sites for CAHFS Laboratory, UC Davis Lucy Whitter Molecular Core Facility, and NVSL:

<http://www.cahfs.ucdavis.edu/>

<http://www.vetmed.ucdavis.edu/vme/taqmanservice/>

http://www.aphis.usda.gov/animal_health/lab_info_services/about_nvsl.shtml

CDFA Animal Health Branch Offices	
Sacramento (HQ)	916-654-1447
Modesto	209-491-9350
Ontario	909-947-4462
Redding	530-225-2140
Tulare	559-685-3500
USDA/APHIS/VS 916-854-3950 or 877-741-3690	

EHM is not a regulatory disease in many states including California and, therefore, it is crucial that owners and trainers work very closely with their own veterinary practitioner to develop a preventative plan that is right for their horse.

Additional Resources:

http://cdfa.ca.gov/ahfss/Animal_Health/equine_herpes_virus.html

<http://www.aaep.org/ehv.htm>

http://www.aphis.usda.gov/vs/nahss/equine/ehv/equine_herpesvirus_brochure_2009.pdf

http://www.aphis.usda.gov/animal_health/emergingissues/downloads/ehv1final.pdf

<http://www.vetmed.ufl.edu/extension/Equine/publications.html>

