This information is a professional communication for the equine industry. The OAHN group is a dedicated group of veterinarians from primary care practices, academia, government and laboratories, who meet regularly to discuss Equine disease and health issues. It is the intent of this program to monitor and protect the health of horses in Ontario.

Ontario Animal Health Network (OAHN)
Equine Expert Network
Equine Herpesvirus -1 Factsheet for Ontario Veterinarians

May 2016

Your OAHN Equine Network Team:

Practitioners

Dr. Drew Hunnisett

(Network Co-Lead)

Dr. Chris Grossenbacher

Dr. Melissa McKee

Dr. Jessica Peatling

Animal Health Lab

Dr. Murray Hazlett

Ontario Vet College
Dr. L. Memo Arroyo

OMAFRA
Dr. Alison Moore
(Network Co-Lead)

Dr. Cathy Furness

Dr. Tim Pasma

Network coordinator
Dr. Melanie Barham

General Information

- EHV-1 is an alpha herpesvirus that causes four main clinical syndromes: respiratory disease in foals and young horses, late-term abortion, neurologic disease and neonatal death.
- Two different strains of the virus cause neurologic disease;
  - Neuropathogenic strain – horses are 5-10x more likely to develop neurologic disease when infected with this strain.
  - Non-neuropathogenic (wildtype) strain – this also causes neurologic disease but is considered less likely to do so.
- The neuropathogenic strain is "immediately notifiable" by the commercial laboratories under the Ontario Animal Health Act.
- At least 70% of the equine population has been infected shortly after birth and are carriers.
- When the virus is reactivated, typically during times of stress, it may cause clinical signs, viremia and nasal shedding.
- Outbreaks are usually caused by reactivation of the latent virus.
- Mules can shed high viral loads but show no clinical signs (silent shedders).


http://www.paulickreport.com/horse-care-category/eight-oregon-farms-now-under-quarantine-from-ehv-1

Clinical signs

- Fever occurs first, but may be missed particularly with the index case.
- Respiratory signs may or may not be present.
- Neurologic signs include ataxia, dysuria/stranguria, hind limb weakness and recumbency.
- The incubation time varies from 4 to 7 days, but may last as long as 14 days.
- Neurologic disease typically occurs 8 to 12 days after fever.
- Only 10% of those horses infected with EHV-1 develop neurologic signs.
- Horses will shed the virus for 10-21 days or longer after initially infected.
- The virus may last in the environment for 7 to 35 days.
- EHV-1 is transmitted by respiratory secretions, through inhalation, nose-to-nose contact with an infected horse or with infectious viral particles in the environment (grooming supplies, stalls, buckets, clothing etc.).
- Fever occurs days before the onset of neurological signs therefore temperatures should be taken twice daily and sick horses and horses with fever moved to an isolation area.
- Most quarantines last 21-28 days after the last fever has been recorded.
- Infection control procedures should be implemented (overboots, foot bath, coveralls, gloves, wheelbarrows/shovels/forks disinfected, restricted access to people, no cats/dogs permitted etc.).

Virus collection and transport systems are available for order from the Animal Health Laboratory (http://www.guelphlabservices.com/files/AHL/AHL%20LabNotes/LabNote_20_EHV_2016-03-01.pdf) and from purchasing companies. See the above link for recommended systems.

References:

Lunn, DP et al. Equine Herpesvirus-1 Consensus Statement, JVIM, 2009 23:450-461

Pusterla, N et al. Investigation of mules as silent shedders of EHV-1 myeloencephalopathy in California Vet Rec April 2, 2012 doi: 10.1136/vr100598

Robinson N, Sprayberry K. Current therapy in equine medicine. 2009. Elsevier Health Sciences.

http://www.vetmed.ucdavis.edu/ceh/resources/ehv1/index.cfm

Laboratory Testing

- PCR testing on nasal/nasopharyngeal swabs AND whole blood (purple top) should be performed to maximize detection. For many, nasal swabs are preferred given the drainage of secretions through the nose and the greater likelihood of detecting DNA.
- Insert swabs into the ventral meatus and rotate the swab for a minimum of 10 seconds against the respiratory mucosa to maximize retrieval of epithelial cells.
- Place the dry swab into a red top tube or virus transport medium (see sidebar). DO NOT ship swabs for EHV-1 PCR testing in culture media used for bacterial culture such as charcoal or Amies gel.
- Ontario laboratories are able to distinguish between the neuropathogenic and non-neuropathogenic strains.
- Only test clinically affected horses. Random testing of clinically normal horses will yield some positive results indicative of dead viral DNA, low transient levels or levels low enough to not pose a risk for disease transmission complicating interpretation.
- Isolate the clinically ill horse(s) and segregate exposed horses until the infection has been confirmed. Quarantine confirmed infected and exposed horses for 21 -28 days pending no new symptomatic horses.

Treatment

- Supportive treatment such as NSAID therapy, IV fluids, dexamethasone and DMSO (≤10% solution) are used as needed.
- L-lysine and zinc supplementation may provide some benefit.

Vaccination

- No vaccine is presently licensed to provide protection against the neurologic form of the disease
- With vaccination, the goal is to reduce the severity of clinical signs and the amount of virus shed for those who become infected
- When dealing with an outbreak, do NOT booster horses that have been exposed to the affected horse(s)
- Consider boosting vaccinated and unvaccinated horses who are on the property but have not been exposed
- The vaccines with the greatest ability to limit nasal shedding include the high-antigen load vaccines licensed for control of abortion (Pneumabort-K®: Pfizer; & Prodigy® Merck), the modified live vaccine (Rhinomune®, Boehringer Ingelheim Vetmedica) and an inactivated multicomponent vaccine (Calvenza®, Boehringer Ingelheim Vetmedica).

Cleaning and disinfecting

- Remove all organic material (dirt and manure) prior to disinfecting
- Use bleach (1:9 bleach:water), accelerated hydrogen peroxide (Accel®), or quaternary ammoniums (Virkon®)

Growing Forward 2 | Ontario Animal Health Network | University of Guelph | Ontario | Canada