EHV-1 Update: What You Need to Know

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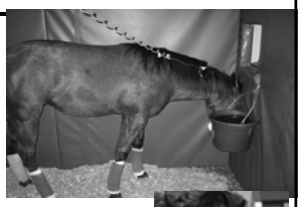
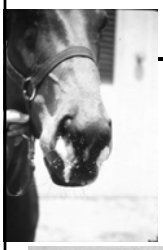
Overview

- What is EHV?
- How do horses get EHV?
- Signs of EHV infection
- EHV Outbreak 2011 - Update
- Testing for EHV
- Prevention of EHV



Equine Herpes Virus (EHV)



EHV

- EHV-1 : Abortion, neonatal death, neurologic disease, respiratory disease
- EHV-4 : respiratory disease, occasional neurologic disease
- Also known as "Rhinopneumonitis"

EHV

- Occurs throughout the world
- Almost all horses > 2years old have been exposed
- After initial exposure, it has the ability to become dormant and not produce clinical signs
- Horses that are latently infected probably act as source of infection for other horses

EHV Infections (Neurologic)

- Sporadic (usually <100/y)
- Increasing prevalence
- Highly contagious
- Attack rate 33% (22-50%)
- Mortality 40% (20-50%)
- Difficult to control

EHV

- ~80% horses probably infected
- Latent infections
- Lifelong infections
- Generally <7 d in environment

Clinical Signs of EHV- Respiratory/Non-neurologic

- Incubation period typically 2-10 days
- Nasal discharge
- Enlarged lymph nodes
- Fever (can be up to 106 F!)
- Limb edema (swollen legs), skin wheals (25%)
- Retinal hemorrhage

Clinical Signs of Neurologic EHV

- Limb weakness & ataxia
  - Symmetric
  - Worse in pelvic limbs
- Tail weakness
- Perineal analgesia
- Bladder distension or incontinence
- Head tilt, facial paralysis (rare)
- Seizures (rare)
- Also called EHM- Equine Herpesvirus Myeloencephalopathy

Ataxia (Uncoordinated Gait)

Equine Herpes Myeloencephalopathy

Transmission of EHV

- Contagious! Spread by horse to horse contact via respiratory tract/nasal secretions
- Spreads indirectly through contaminated objects
  - Human hands or clothes
  - Contaminated equipment/tack/trailers/grooming equipment
  - Contaminated feed and water buckets
- Can also be airborne

EHV in the Environment

- Viable for about 7 days in normal conditions
- May survive up to 1 month
- Clean equipment before disinfecting
- EHV is sensitive to most disinfectants
- Hand washing/sanitizer

EHV-1 2011 Outbreak

- National Cutting Horse Association Western National Championship in Ogden, UT (April 29-May 8)
- Several horses develop EHV-1
- States that horses came from/went to were notified

EHV-1 2011

- Owners of horses known to have been exposed were contacted by state officials
- Suspect and confirmed cases are quarantined
- Total of 84 cases are CONFIRMED EHV or EHM in 10 states (AZ, CA, CO, ID, NM, NV, OK, OR, UT, WA)
- Of the 84, 58 were at the UT event
- 12 horses have died or were euthanized

EHV- 1 2011

- 2,093 horses have been exposed from this outbreak (421 in UT at event, 1672 at secondary and tertiary premises)
- 78 additional suspect cases (not yet confirmed)
- 240 exposed premises – 61 have suspect or confirmed cases
- USDA is updating all information: http://www.aphis.usda.gov/vs/nahss/equine/ehv/

USDA Definitions

- Suspect EHV-1 case: A horse exposed to EHV-1 that develops a fever but no neurologic signs
- Confirmed EHV-1: Laboratory confirmation of EHV-1 and no neurologic signs
- Suspect EHM: A horse exposed to EHV-1 that develops neurologic signs
- Confirmed EHM: Suspect case with laboratory confirmation

FLORIDA EHV-1

- One farm in Alachua county is under state quarantine
- 2 horses euthanized due to EHV-1 (one suspect case, one confirmed case)
- NO suspected exposure off affected premises
- NO link to UT event
- http://www.freshfromflorida.com/ai/index.shtml

UF LAH Response Precautions

- Admissions are asked standard questions
- Travel history?
- Contact with horses from West?
- Cutting horse, QH, Paint, etc?
- Presenting complaint?
- History of fever or neurologic signs?

Presumptive Diagnosis of Neurologic EHV

- Acute-onset hind limb ataxia

  PLUS
- History of fever OR
- Contact with a known or suspect case OR
- Xanthochromic (yellow colored) spinal fluid

- THESE CASES MUST BE ISOLATED

Diagnosis of EHV

- Sample submission
  - Nasopharyngeal swab
  - Blood - Purple-top tube
- Viral isolation/identification
  - Virus isolation
  - PCR
- Serology
  - Acute (SN vs CF)
  - 4x increase in titer

Diagnostic Testing

- Wear disposable gloves and change gloves between each horse
- Collect whole blood into EDTA and label sample (preferably have an assistant label samples)
- If a twitch is used to restrain the horse it must be washed and disinfected between horses
- Nasal swab collected using Dacron tipped swab with plastic shaft. Swab should be in contact with nasal mucosa for at least several seconds.
- Place swab in viral transport media or other transport solution recommended by laboratory performing the test and label sample. Use a small volume of transport fluid (less than 2 mL) to avoid over-dilution of the sample.
- Perform hand hygiene between horses sampled and put on new pair of examination gloves
- Keep samples cool but not frozen and ship by overnight delivery
- Request real-time or nested PCR test and virus isolation
- If sample reported as PCR positive, request typing of the virus

Treatment of EHV

- Supportive
- Urinary catheter
- Abdominal sling
- Anti-inflammatories
  - Flunixin
  - Corticosteroids?
- Anti-virals
  - Valacyclovir (Valtrex)
  - Ganciclovir (experimental use)

Treatment of EHV

- Valacyclovir
  - In experimental study (OSU, Maxwell et al), Valtrex performed well when started within 2 days of infection
  - Now available in US as a generic
  - Did not perform as well later in disease course
- Ganciclovir
  - In experimental study (OSU), did better at halting progression of neurologic disease
  - EXPENSIVE

Prevention of EHV

- Vaccination
- Biosecurity
- Quarantine new arrivals
  - 21 days
  - Temperature BID
- Breeding farms
  - Disinfect between mares
  - Individual twitches?

Vaccination for EHV

- Vaccines are NOT effective (or labeled) for preventing neurologic disease
- Recommended for most horses that are sport/performance/pleasure or exposed to other horses
- Recommended for ALL broodmares

Available Vaccines for EHV

- Speak with your veterinarian about the best choice for your horses
- Killed low antigen vaccines for EHV-1&4
  - Intervet, Pfizer, Boehringer
- Killed high antigen abortion vaccines
  - Pneumabort-K® (Pfizer) and Prodigy® (Intervet)
  - Superior performance with higher antibody responses and some cellular response to vaccination
- MLV EHV-1 (Rhinomune®, BI)
  - Superior response (better clinical protection and reduced viral shedding) when compared to low antigen vaccines (Goodman et al 2006), no results compared to high antigen vaccines

EHV Vaccination of Adults

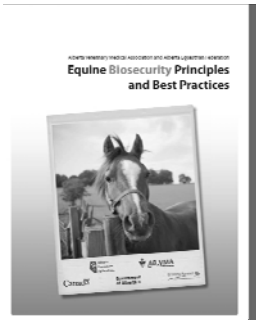
- Recommended to prevent abortion in broodmares
  - Give at 5, 7, 9 months gestation
- Reduce signs of respiratory disease in foals, weanlings, young performance horses
- 3 dose primary series
- Consider 6 month interval for young horses

EHV Vaccination of Foals

- Most foals will <u>not</u> mount a protective response to vaccination at 3-4 months of age if the mare has been vaccinated (Wilson et al)
- Foals of Vaccinated Mares
  - 3 dose series with inactivated or MLV at 5-6 months of age
  - 2nd dose 1 month later, 3rd dose 3-4 months later
- Foals of Unvaccinated Mares
  - 3 dose series with inactivated or MLV at 4-6 months

Biosecurity Practices

- Biosecurity means doing everything you can to reduce the risk of infectious disease being carried on your farm by people, animals, equipment, vehicles
- Management of exposed horses



Management of Exposed Horses

- Take temperatures twice daily, isolate horses with fever (T>101.5 F)
- Isolate horses returning from events if possible exposure
- Contact DVM if horse develops fever
- Use separate equipment, hand sanitizers, separate clothing, disinfectants

When Traveling with Your Horse

- Be sure vaccines are up to date
- Bring your own buckets, equipment, leads
- Strip old bedding if using stalls
- Clean all organic material out of stall, disinfect, add new bedding
- Avoid communal feed and water sources
- No nose to nose contact

Additional Resources

- http://www.abvma.ca/resources/documents/EquineBiosecurityPrinciplesandBestPracticesguide.pdf
- www.aaep.org
- http://www.aphis.usda.gov/vs/nahss/equine/ehv/
- http://www.freshfromflorida.com/ai/index.shtml
- http://www.vetmed.ufl.edu/extension/equine/

Thank You!

- The Sanctuary
- Any Questions?