Potomac Horse Fever

Disease Name: Potomac horse fever (PHF), (equine monocytic ehrlichiosis, equine ehrlichial colitis, or acute equine diarrhea syndrome, *Neorickettsia risticii, Neorickettsia findlayensis)*

Disease Type: Potomac horse fever (PHF) is a non-contagious (infected horses cannot transmit the disease to other horses) equine infectious disease caused by infection with the intracellular bacteria, *Neorickettsia risticii*, and less commonly, *Neorickettsia findlayensis.* The disease can affect horses of any age, breed or sex. PHF cases usually occur in summer and fall but may occur in any season depending on weather conditions.

Transmission: Aquatic insects, such as caddisflies, mayflies, damselflies and dragonflies, containing the rickettsia-infected trematodes are ingested by the horse and the trematodes cause inflammation in the intestine. These insects are often accidentally ingested after dying on or near feed, water troughs, or marshy ground. Transmission through the placenta can cause abortion which may occur weeks to months after apparent recovery from the disease. There is no evidence of transmission from horse to horse.

Frequency/Risk Factors: Risk is increased for horses housed near (within approximately 5 miles) a freshwater stream, river or irrigated pasture in endemic areas. PHF is more common in the northeast or midwest and less common in the southwest, due to climate. The risk of ingestion of insects increases with nighttime use of barn lights, which attract the infected insects.

Incubation period: 1-3 weeks

Carrier status: Horses have not been documented to remain infected long term, and horse-to-horse transmission does not occur.

Clinical signs and symptoms:

Highly variable:

- Fever as high as 107º F can occur 7-14 days before onset of diarrhea
- Diarrhea: variable, ranging from absent to severe
- Depression associated with lack of appetite and lethargy
- Laminitis (with or without diarrhea) can occur in up to 40% of cases
- Mild to moderate colic
- Decreased gastrointestinal sounds
- Swelling of limbs, ventral body, and prepuce of males
- Abortion due to transplacental infection of fetus

Diagnosis: Diagnosis is made by a veterinarian using PCR to detect DNA from the rickettsial organism in the feces, blood, or aborted fetal tissue. It is important to note that only *Neorickettsia risticii* bacteria can be detected at this time by commercial PCR. Detection of rising antibody titer from paired blood samples can also be used to support a diagnosis. Because diarrhea caused by PHF can look identical to diarrhea from other intestinal infections, testing for coinfection by other possible causes of diarrhea such as salmonella and clostridium is recommended.

Treatment: Treatment includes tetracycline antimicrobials administered under the supervision of a veterinarian. Many commonly administered antibiotics are not effective against *Neorickettsia* spp. Fever and diarrhea usually resolve within 72 hours of treatment. In severe cases supportive care including intravenous fluids, laminitis prevention, and non-steroidal anti-inflammatory drugs may be required.

Prognosis: The prognosis depends on the severity of the disease. Although a majority of treated horses have resolution of clinical signs within 72 hours, horses that require hospitalization and/or develop laminitis have a reduced likelihood of survival.

Prevention: A PHF vaccine is available but is not fully protective against disease. Vaccination is likely effective at reducing the severity of clinical signs and is recommended in areas with increased risk for PHF.

Biosecurity: Horses with diarrhea should be isolated until contagious diseases are ruled out.

Zoonosis: PHF does not affect other animals or humans.

