

WHAT'S YOUR DIAGNOSIS? POTOMAC HORSE FEVER

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Potomac Horse fever, also known as Equine monocytic ehrlichiosis, is an acute enterocolitis syndrome in horses. It was first described near the Potomac River in Maryland in 1972 but is now recognized in 43 states within the United States as well as in other countries. The disease is caused by the bacteria *Neorickettsia risticii*.

Due to the natural life cycle of the organism, clinical cases are primarily seen on premises that are near fresh water rivers, streams, canals, and ponds during the warmer months of May through November. The organism is harbored in flukes (flatworms) that parasitize water snails. As the water temperatures warm, the flukes hatch an immature form, called cercaria, which is then able to transport the organism and release it into the water. Immature flukes are then ingested by aquatic insects, such as caddis flies, mayflies, dragonflies, and stoneflies. The most important route of transmission is when flying insects contaminate a horse's environment and are ingested with feed or water. Direct transmission from horse to horse is extremely rare and requires consumption of a large amount of manure from a sick horse.

After the organism is ingested, it attacks the enterocytes of the small and large intestine and multiplies causing marked inflammation, which results in an acute colitis. The principal clinical signs of Potomac Horse Fever include fever (ranging from 102-107oF), depression, anorexia, and diarrhea in 60% of cases. Blood work results vary in the early stages of disease, ranging from normal to leukopenia (decreased white blood cell count with low neutrophils and lymphocytes). Within several days of disease onset, a marked leukocytosis (high white blood cell count) may commonly be seen. Pregnant mares that are affected tend to abort several months after showing clinical signs of disease. Abortions are generally accompanied by placentitis and retained placenta. If toxins from the inflamed intestinal tract enter the blood stream, the horse may become systemically toxic. Laminitis is a severe complication that

occurs in 40% of cases due to systemic toxicity. The first signs of lameness in any affected case should be addressed as an emergency due to the acute nature of disease.

Not all horses exposed to the organism become ill, but the disease can be deadly in horses. Most affected cases respond well to early treatment with the intravenous antibiotic oxytetracycline. If therapy is started early, clinical signs typically resolve by the third day and treatment is stopped on the fifth day. Fluid therapy may be needed to correct dehydration and electrolyte imbalances if diarrhea is present. Anti-inflammatory drugs help reduce the effects of toxins in the bloodstream. Severe cases may require hospitalization for plasma transfusions and intensive care. Placing shoes or pads on the feet may also help to prevent laminitis.

A preliminary diagnosis may be made on clinical symptoms combined with geographical location and time of the year. A definitive diagnosis of Potomac Horse Fever is based on isolation or detection of *Neorickettsia risticii* from the blood or feces of infected horses. A PCR assay can be performed within 2 hours and detects the organisms DNA in the sample. Collection of either blood or feces for testing must be done before treating with antibiotics for accurate results.



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Potomac Horse Fever vaccines are commercially available from your veterinarian but are not 100% effective. There are many different strains of the organism that can

be isolated from horses in different areas. The current vaccines contain only a single strain of the organism and do not provide protection against other strains. Even though the vaccine will not completely protect the horse from disease, it does appear to lessen the severity of the disease process.