Potomac Horse Fever
Dr. Bob Wright

Potomac horse fever (PHF) was first identified in the United States in 1985. It causes severe illness (diarrhea and colic) and death in approximately 30% of infected horses. Potomac horse fever is caused by the rickettsial agent, Neorickettsia risticii (formerly known as Ehrlichia risticii). The disease is observed more commonly in some geographic areas than others; it occurs in Eastern Ontario (Brighton to Kemptville) and just below Lake Simcoe (Keswick) more than other areas of the province. However, a case was also diagnosed in the Ancaster area.

The transmission of Neorickettsia risticii to horses and the organism's location in nature were previously unknown. However, Dr. John Madigan and his co-researchers from the University of California discovered that N. risticii is maintained in nature in a complex aquatic ecosystem\(^1\,^2\). Immature and adult forms of caddisflies, mayflies, damselflies, dragonflies, and stoneflies were found to contain metacercariae (the intermediary form of trematode parasites), which were infected with N. risticii. These flies spend part of their life cycle in water and then hatch and fly onto pastures. Horses fed infected caddisflies developed PHF.

Field veterinarians in California indicate that PHF occurs about 7 days after large hatches of gray moths (caddisflies) are observed on pasture. Transmission to horses is thought to occur through accidental ingestion of these insects while grazing pastures. Further research will need to determine if PHF is seen in years when these insects are at the peak of their life cycle; if changes to grazing management may have an effect; and if the infected flies remain infective in stored feed. No evidence suggests that horse-to-horse transmission occurs.

Prevention

Currently, six strains of PHF have been isolated. There is a vaccine to help prevent PHF. However, the vaccine was created from a single isolated strain of N. risticii from a single horse. Horses fully vaccinated for PHF, including twice-yearly boosters, have developed PHF.

Take Home Message

- Potomac horse fever occurs in specific regions of Ontario.
- Transmission is normally associated with horses grazing pastures containing infected caddisflies.
- There is a vaccine available to protect horses from at least one strain of the organism.

References


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