



DAVIE COUNTY LARGE ANIMAL HOSPITAL

928 Farmington Road
Mocksville, NC 27028

Equine Lyme Disease

[By Animal Health Diagnostic Center, Cornell University College of Veterinary Medicine & AAEP Infectious Disease Guidelines: *Borrelia burgdorferi* infection and Lyme disease - Copyright AAEP Revised 2020]

What causes Lyme disease?

Lyme disease is caused by infection with the bacterium *Borrelia burgdorferi*. The bacteria are transmitted to humans and animals through the bite of infected blacklegged ticks, also known as deer ticks. Lyme disease is common in horses residing in regions endemic for *Ixodes* spp. ticks, and infection is on the rise. While many horses will become infected with *B. burgdorferi* following a tick bite, the percentage of horses that will go on to develop Lyme disease is currently unknown.

Symptoms and Clinical Signs

Clinical signs of Lyme disease in horses include shifting-leg lameness, generalized stiffness, hypersensitivity to touch, weight loss, and poor performance. Sometimes, the bacteria can infect the central nervous system, leading to neurologic symptoms. Only 5-10% of infected animals are expected to show clinical signs of Lyme disease. These signs typically occur at the chronic disease stage and as early as 2-5 months after infections. It is possible for signs to develop much later.

How is Lyme disease diagnosed?

A veterinarian will observe your horse in order to confirm clinical signs of disease. If clinical signs correspond to Lyme disease, your veterinarian will order a serologic test such as the Lyme Multiplex assay. The Lyme Multiplex assay quantifies antibodies directed against specific proteins on the surface of *B. burgdorferi* at three different stages of the bacterial life cycle. This antibody profile can indicate whether an animal has been recently infected or is chronically

infected with *B. burgdorferi*. It can also be used to monitor protective antibodies after vaccination.

How can Lyme disease be prevented?

Tick control and prevention methods significantly reduce the likelihood of infection. Tick control through environmental avoidance and diligent removal from horses remains the mainstay of preventing exposure and infection with *B. burgdorferi*. Tick repellants: Multiple spray and spot-on tick repellent products are available. These products may contain a combination of cypermethrin, permethrin, pyrethrins, or piperonyl butoxide, and demonstrate variable efficacies and durations of action. “Tickscaping”: Environmental tick populations can be reduced by removal of leaves and woody debris, pasture mowing, and maintaining dry, well-lit paddocks whenever possible. There is not a Lyme vaccine licensed for use in horses at this time. Equine *B. burgdorferi* infection is not contagious, and therefore, isolation and biosecurity measures are not necessary in infected horses.

Treatment

Several options exist for treatment of horses with suspected Lyme disease, and a gold standard protocol has not yet been developed. Tetracycline antimicrobials are commonly administered for 7 to 30 days (oxytetracycline 6.6 mg/kg IV q24h; or doxycycline 10 mg/kg PO q12h; or minocycline 4 mg/kg PO q12h). It should be noted that tetracycline antimicrobials exert anti-inflammatory effects through their inhibition of matrix metalloproteases, which may contribute to improvement in clinical signs during treatment independently of any effects on *B. burgdorferi*. Accordingly, relapse of clinical signs following treatment should not be interpreted as failure to clear the organism, as the improvement may have been due to the medication’s anti-inflammatory properties alone. Ceftiofur has also demonstrated in-vitro efficacy against *B. burgdorferi*, with MIC values falling within the range of expected serum and tissue concentrations following administration. Titers should not be used alone to assess response to treatment or as deciding factors for prolonged therapy, as many treated horses maintain positive titers for months to even years.

Prognosis

The prognosis for *B. burgdorferi* infection is generally good as most exposed horses do not show clinical disease. The prognosis for neuroborreliosis and *B. burgdorferi* uveitis is guarded to poor.

If you are concerned your horse may be suffering from Lyme Disease, please contact Davie County Large Animal Hospital to set up an appointment or talk to one of our veterinarians. We offer Lyme Multiplex Assay diagnostics. Our veterinarians will work with you to find a suitable treatment plan personalized to you and your horse.

Davie County Large Animal Hospital

928 Farmington Road, Mocksville, NC 27028

www.LargeAnimalHospital.com

Email: dclahdvm@gmail.com

Phone: 336-998-7131