L. intracellularis Research Review

Researchers have long known that L. intracellularis, the bacteria that causes equine protozoal myeloencephalitis (EPE), can cause a variety of clinical signs in horses, including depression, fever, inappetance, weight loss, and edema. The bacteria is transmitted through ingestion of contaminated pasture or feed, and infection usually occurs during the fall or winter months. However, the exact role of mares in the epidemiology of EPE is not well understood.

In a recent study, veterinarians at the University of Kentucky College of Veterinary Medicine collected whole blood samples from mares and foals on 15 Central Kentucky Thoroughbred farms during the 2012 foaling season. They found an overall seroprevalence of 68%, with levels on individual farms ranging from 60% to 80%. This is higher than previous studies, which found a seroprevalence of 25% to 33% in mares and foals.

The team also made an interesting discovery regarding where the farms were located and what month had the highest seroprevalence. Mares' Role in Epidemiology

Page and colleagues found that the highest seroprevalence was in Central Kentucky, with a peak in October. They also noted that mares with more than five months of seropositivity were more likely to have foals that were seropositive as well. This suggests that mares may play a role in the transmission of L. intracellularis.

Developing a Challenge Model

Page and his colleagues designed a challenge model to test the hypothesis that EPE is caused by a specific inflammatory mediator. They challenged six weanlings with L. intracellularis, isolated from a previous case of EPE, to six weanlings through a nasogastric tube. The team performed a necropsy on each of the weanlings at the end of the study, and performed weekly ultrasound to check for thickening of the intestinal walls.

Validating an ELISA Test

Page and his colleagues validated an ELISA test for detecting antibodies to L. intracellularis. They used sera from horses with confirmed EPE cases and horses without disease as controls. The test showed a high level of specificity and sensitivity, with a positive predictive value of 95% and a negative predictive value of 90%.

Conclusion

Researchers around the world are always working to better understand a bevy of horse health problems. And in the case of EPE, understanding the role of mares in the epidemiology of the disease is critical. More research is needed to fully understand the role of L. intracellularis in the development of EPE, and to develop effective strategies for preventing and treating this important disease.