

Equine Protozoal Myelitis

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Equine Protozoal Myelitis (EPM) is a disease of the nervous system. Although not commonly found in Arizona, we see several cases each year especially in horses that have been moved from other regions of the United States including California. Clinical signs of this disease may vary based on the distribution of the lesions within the nervous system, but common symptoms include asymmetric muscle atrophy, commonly of the hind quarters, lameness that is difficult to diagnose, and poor coordination. Owners most commonly complain of a vague lameness progressing to ataxia (failure of muscle coordination), stumbling, or a spastic gait.

There are several protozoa that may cause this disease, the most common are *Sarcocystis neurona* and *Neospora hughesi*. Infection is believed to occur by the horse ingesting a sporocyst (reproductive cell) of the protozoa. The sporocyst is passed in the feces of the opossum which contaminates the water and/or feed source of the horse. There is some evidence that other wildlife and birds may play a role in spreading sporocysts to the feed. Once the sporocyst reaches the intestinal tract of the horse it penetrates the gut, moves into the blood stream, and then the protozoa will migrate to the nervous system.

How do you know if your horse has Equine Protozoal Myelitis? The most important step in determining the diagnosis is to contact your regular veterinarian and discuss the signs and symptoms. It is important to be aware there are other diseases that cause neurologic disease such as Equine Herpes Virus-1, cervical vertebral stenotic myelopathy (Wobblers syndrome), West Nile Virus, Eastern, Western, Venezuelan encephalitis, and most notably rabies. If you feel that your horse is exhibiting neurologic abnormalities, do not attempt to handle/restrain your horse and call your veterinarian immediately. Based on your observations, your veterinarian may recommend a neurologic examination. This will likely include a basic physical exam, observation of mental status, and a series of tests such as turning the horse in tight circles, abruptly stopping the horse, and trotting the horse with its neck held in extension. If your horse performs any of these tests abnormally, diagnostic tests will likely be recommended including a test for EPM. There are several tests available for EPM. The most comprehensive test that is relatively new is the indirect fluorescent antibody test (IFAT) for *Sarcocystis neurona* and *Neospora hughesi*. This test is a simple blood test, but is thought to be effective in determining the likelihood that the horse is infected. The Western Blot test is also available and was the only test available for many years, but is more difficult to interpret when compared to the IFAT.

Treatment for EPM may include either Ponazuril or Nitazoxanide which are antiprotozoal medications administered orally. Many veterinarians recommend treatment for 30 to 60 days. The original treatment for EPM was a combination of potentiated sulfonamides and pyrimethamine which may take up to 12 weeks to be effective. Supplemental treatment may include Vitamin E for its antioxidant effects. The prognosis for improvement of symptoms with treatment is usually 60-75%. There is some concern that no matter what treatment is used that there is the potential for relapse even months after no symptoms were apparent.

Is there effective prevention against your horse contracting EPM? Unfortunately, there is no proven method to prevent infection. A vaccine is available but its effectiveness remains unproven. If your horse has been vaccinated it is difficult to determine whether the titer may be increased due to antibodies made as a result of vaccination or due to exposure. Hay and feed material for horses should ideally be kept in a closed storage room to prevent wildlife from eating and defecating near the horses' food source.

EPM is a frustrating disease to diagnose and treatment success is variable. If you feel your horse is experiencing neurologic deficits, please contact your veterinarian immediately. Many neurologic disorders, if treated early in the course of disease, may have a better outcome than if they are treated later in the disease process.