

The Role of Infection and Immunity in Equine Protozoal Myeloencephalitis (EPM)

Purpose

To understand more about how EPM affects the immune system of horses, and discover how we might improve the diagnosis and treatment of the disease.

Background

EPM is a devastating equine neurological disease. Although the disease is relatively common, we know little about how an underlying infection, *Sarcocystis neurona*, affects disease progression or the way an affected horse's immune system fights the disease.

EPM can lead to long-term, permanent deficits in horses that develop disease. In some rare cases, affected horses may recover without treatment. However, many horses that develop disease have permanent neurologic changes, and may be limited in what they can do. Many affected horses, if they continue to get worse, and treatment is not chosen or proves ineffective, can develop progressive disease to the point that they may need to be euthanized.

Eligibility

- Written owner informed consent obtained prior to accepting the horse
- EPM-affected and non-EPM-affected horses whose owners have chosen euthanasia for medical or quality-of-life reasons
- Positive test for antibodies in the CSF
- Age > 1 year

Exclusion Criteria

- Any uncontrolled medical condition that may disrupt study intent and objectives
- Horse is pregnant

Study Design

For this study, we are seeking horses who need to be euthanized for medical or quality-of-life reasons. No healthy, sound horses will be enrolled. This study involves investigation of the immune response in EPM-affected horses compared to unaffected horses who are being euthanized for another reason, such as lameness. We hope our findings will allow us to determine if EPM-affected horses have poor immune responses, so that in the future, we can determine other therapies to enhance recovery of EPM-affected horses. To put your horse in one of these groups (EPM-affected or non-affected), we will perform a neurologic exam and collect blood. After your horse is euthanized, we will collect samples for histopathology to assess the immune response and identify infection by *Sarcocystis neurona*. All euthanasia procedures will take place at the Veterinary Teaching Hospital on the Virginia Tech campus in Blacksburg, VA.

Compensation

At the discretion of the study investigator and depending on clinical signs and test results, euthanasia, testing for EPM (if needed), necropsy, and disposal fees may be included.

Contact

Dr. Sharon Witonsky, Associate Professor, Equine Field Service

Office Phone: 540-231-9042 | Email: switonsk@vt.edu

If your query is urgent, please call the Large Animal Hospital (540) 231-9042 and ask for Dr. Witonsky to be paged.