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EQUINE RECURRENT UVEITIS (ERU)

What is ERU?
Equine recurrent uveitis (ERU) is also known as periodic ophthalmia or moon blindness. ERU is a common cause of blindness in horses. It is thought to be an immune-mediated disease of multiple origins which causes inflammation within the eye. Recurrence of anterior uveitis is the main indication of ERU. The disease is bilateral in approximately 20% of cases.

Uveitis is broadly defined as inflammation within the eye. More specifically it is inflammation of the uveal tract (uvea). The outer layer that encloses the eye is composed of the cornea and sclera. The innermost layer is a nerve layer called the retina. Between these layers is a blood vessel laden uveal tract which provides nutrition to the eye. The uvea is made up of the coloured iris inside the eye, to ciliary body behind the iris which produces aqueous humour, and the choroid layer which nourishes the retina. The uveal tract is a target for diseases which originate elsewhere in the body due to its rich blood supply. Signs of systemic disease can first be noted in the eye, because the normally transparent cornea can provide a window to early signs of disease. However, uveitis can also originate within the eye as in the case of cataracts, lens changes, corneal ulcers, or trauma.

What causes ERU?
The specific causes of ERU are unknown. There are current theories which indicate that hypersensitivity to infectious agents such as Leptospira sp. may be a possible cause. There is also some indication that there may be a breed-related predisposition in acquiring ERU. Appaloosas and Appaloosa crossbreeds tend to be most commonly affected with ERU.

What will I see if my horse has ERU?
ERU can be characterized by alternating episodes of anterior uveitis and ‘quiet’ asymptomatic periods. During the active phases, the most common signs of uveitis include:

- Pain as evidenced by blinking, squinting, tearing, and sensitivity to light.
- The conjunctiva becomes red and swollen.
- The cornea may appear dull, cloudy or blue.
- The pupil may be misshapen and/or miotic (small).
- Blindness, partial or complete, may also occur.

These symptoms may be unilateral or bilateral. The active episodes will cause permanent changes to occur in the eye, including: scarring, posterior synechia, cataracts, and/or retinal detachment.

How is ERU diagnosed?
ERU is a condition which is characterized by inflammation within the eye. In most cases uveitis can be diagnosed following a complete history and an ocular examination. The ophthalmologist will use special instruments which magnify and illuminate the structures within the eye. He will examine the external and internal structures of the eye and measure the pressure within the eye. Uveitis can cause a
drop in the normal intraocular pressure by causing a decrease in aqueous humour production by the ciliary body.
In order to determine the exact cause of the uveitis, further testing may be required. If ERU is suspected, Leptospiral titers will be done on blood samples from the horse. Positive titers of 1:400 or greater are significant. These results, in conjunction with the clinical signs, may highlight ERU but cannot confirm the diagnosis of ERU.

**What treatment options are available for ERU?**
The main goals of ERU treatment are to preserve vision, decrease pain, and minimize the recurrence of uveitis. Specific prevention and therapy is difficult because the cause has not been fully identified. Overall, the prognosis for ERU is usually poor to preserve vision, but the disease’s progress can be controlled with medical treatment. Aggressive medical treatment is warranted to prevent further complications.
The most common treatments include:
- Anti-inflammatories – given topically or systemically to reduce inflammation.
- Corticosteroids – given topically reduce the inflammation.
- Non-Steroidal Anti-Inflammatory Drugs (NSAIDS) – given systemically to reduce inflammation.
- Mydriatics – given topically to dilate the pupil and relax the muscles and will help to reduce pain and the incidence of adhesions.

Note that topical corticosteroid use may be postponed if there is damage to the corneal surface due to the fact that they may prevent healing of the ulcer.
ERU treatment which focuses on controlling the inflammation is lifelong. This may not only become costly, but eventually some horses may become difficult to treat. Stopping the medications will bring on recurrences of active uveitis. It is not recommended to stop or change medications unless recommended to do so by your veterinarian.
In some cases, the uveitis becomes so severe or uncontrollable that enucleation is necessary to make the animal comfortable.

Research is currently being done in institutes around the world to identify potential causes and treatments for Equine Recurrent Uveitis.