ACVIM Fact Sheet: Pituitary Pars Intermedia Disease in Horses

**Overview**

Pituitary pars intermedia dysfunction (PPID), often referred to as Equine Cushing’s Disease, is the most common endocrine disorder in horses, ponies, donkeys and mules. PPID most often affects older horses (teenage or older) but has been observed in some younger than 10 years of age. In cases of PPID, the hypothalamus and pituitary gland, which reside at the base of the brain (inside the skull), fail to communicate appropriately. These glands normally communicate via nerves and bloodflow to signal production and release of many hormones into the horse’s bloodstream. This failure of normal communication results in the pituitary gland becoming hyperactive, producing an excess of various hormones. The pituitary hormone that is routinely measured for diagnosis of PPID is adrenocorticotropic hormone (ACTH).

**Signs & Symptoms**

The elevated levels of various hormones lead to many visible changes, including:

1. Failure to shed hair fully each spring
2. Long, wavy/curly hair
3. Chronic infections
4. Repeated laminitis episodes sometimes with associated hoof abscesses
5. Excess or inappropriate sweating
6. Increased water intake and urination
7. Lethargy
8. Loss of muscle mass, typically noticed over the back and hind quarters, as well as the “pot-bellied” appearance
9. Infertility or abnormal heat cycles in mares

Some PPID cases may have abnormal white blood cell counts or high insulin or blood sugar levels. In addition, one of the hormones altered by PPID, cortisol, can reach elevated levels in the blood. Elevated cortisol is believed to have negative consequences including immune system suppression over time and subsequent chronic infections in PPID-affected horses or ponies. However, measurement of cortisol is not a reliable method of testing for PPID.

**Diagnosis**

To diagnose PPID both resting and stimulation tests are available. For horses with advanced signs of disease, often a resting ACTH concentration measurement or the overnight dexamethasone suppression test (DST) is performed. For horses in early stages of disease with clinical signs, the Thyrotropin Releasing Hormone (TRH) Stimulation test may be performed (with ACTH levels measured before and after administration of TRH).
as this test may be more helpful in diagnosing early disease. If results are negative, then repeat testing is recommended in 6-12 months. Alternatively, if your veterinarian observes clinical signs that are consistent with PPID, treatment may be recommended without blood tests. Protocols for the recommended tests are available for veterinarians in other resources. The challenge is making a PPID diagnosis at an early stage in the disease process so owners and veterinarians can begin managing the disorder sooner.

Further diagnostics to include or consider are:

- Foot radiographs, especially if laminitis is suspected or has occurred
- Complete blood count (CBC)
- Serum biochemistry profile
- Urinalysis
- Fasting insulin or insulin following an oral glucose challenge, such as the oral sugar test

One should consider repeating the CBC and biochemistry profile annually.

**Treatment & Aftercare**

While PPID is not curable, medical management and meticulous husbandry are recommended to reduce the signs and symptoms associated with this disorder. An integral part of PPID management is medical treatment. The most widely used drug is the brand name veterinary product **Prascend®**. It helps decrease some of the hormone production by the pituitary gland. Several studies have shown that Prascend®-treated horses have significant improvements in hair coat, frequency of urination/drinking, frequency of infections and laminitis bouts, and many laboratory test results. The drug is prescribed for once daily administration.

Another drug, which may be useful in treatment of PPID, is **cyproheptadine**. Studies suggest that cyproheptadine is not as effective in improving PPID symptoms compared to Prascend®. However, it may aid those animals with minimal response to Prascend® alone. A combination of both drugs is occasionally recommended.

Over time, the amount of drug your horse requires to manage this condition may change due to progression of the disease. Repeated testing (as described above) can help your veterinarian to determine the need for an increase in drug dose or addition of another drug to your horse’s medication regime.

The other important component of management of PPID is maintenance of excellent husbandry and general health care. Close attention to nutrition, vaccination and deworming, medical treatment and hoof care of horses with PPID is recommended.

Good husbandry practices to reduce the symptoms of PPID include:

- Frequent bedding changing (to avoid excessively wet stalls)
- Body clipping throughout the year as needed
- Frequent bathing/cold water hosing for the excess sweating, especially in hot weather
- Consistent monitoring for signs of infection (including monitoring rectal temperature)
- Regular dental care annually or more often
- Restriction of sugars such as found in lush pastures and sweet feeds

**Prognosis**
PPID is a disease of older equids that can be managed, but not cured. Chronic infections and laminitis tend to be the most detrimental and frustrating clinical manifestations of the disorder. Thus, early recognition and regular veterinary and farrier care are imperative to help one's horse or pony maintain a good quality of life.

**Fact Sheet Author**
Emily A. Graves VMD, MS, DACVIM (LAIM)
Senior Equine Veterinarian, Zoetis
© 2014

**Fact Sheet Disclaimer**
The fact sheets which appear on the ACVIM website are provided on an "as is" basis and are intended for general consumer understanding and education only. Any access to this information is voluntary and at the sole risk of the user.

Nothing contained in this fact sheet is or should be considered, or used as a substitute for, veterinary medical advice, diagnosis or treatment. The information provided on the website is for educational and informational purposes only and is not meant as a substitute for professional advice from a veterinarian or other professional. Fact sheets are designed to educate consumers on veterinary health care and medical issues that may affect their pet's daily lives. This site and its services do not constitute the practice of any veterinary medical or other professional veterinary health care advice, diagnosis or treatment. The ACVIM disclaims liability for any damages or losses, direct or indirect, that may result from use of or reliance on information contained within the information.

ACVIM advises consumers to always seek the advice of a veterinarian, veterinary specialist or other qualified veterinary health care provider with any questions regarding a pet's health or medical conditions. Never disregard, avoid or delay in obtaining medical advice from your veterinarian or other qualified veterinary health care provider because of something you have read on this site. If you have or suspect that your pet has a medical problem or condition, please contact a qualified veterinary health care professional immediately.

ACVIM reserves the right at any time and from time to time to modify or discontinue, temporarily or permanently, these fact sheets, with or without notice.