

ENDOCRINE DISORDERS (CUSHING'S DISEASE AND EQUINE METABOLIC SYNDROME)



INTRODUCTION

Endocrine disorders are those that affect hormone production. The two that we are most concerned with in donkeys are Equine Cushing's Disease and Equine Metabolic Syndrome. You may have heard of these if you have had experience with horses and ponies. It is important to be aware of the signs and effects of these disorders in donkeys and note how they might differ from horses and ponies.

EQUINE CUSHING'S DISEASE

WHAT IS IT?

A common hormonal disorder, which affects a gland in the brain, called the pituitary gland. The disease arises when the nerve supply to the pituitary gland becomes damaged, which ultimately causes increased quantities of hormones to be released from the gland. The specific part of the gland that is affected is called the 'Pars Intermedia' and this is why the disease is more correctly termed 'Pituitary Pars Intermedia Dysfunction (PPID).' Cushing's disease affects humans, dogs and cats, amongst other species but the area of the pituitary gland affected in equines is different, which is why different clinical signs are seen.

The precise cause of the gland damage has not been proven, however the severity does seem to increase with age. There is also a possibility that obesity predisposes to PPID but this has not been confirmed.

CLINICAL SIGNS

Horses and ponies with PPID are typically identified by long hairy coats, (notably the winter coat is retained for a longer than normal time), excessive sweating and excessive urinating and drinking. Amongst our donkey population we do not often see these signs, so PPID can go unnoticed. Donkeys typically have longer coats than horses but do look out for a coat that seems excessively long over the summer months. It may help if you can try and monitor a donkey's water consumption, if you think that they may be drinking more than usual.

Often the first indication that a donkey may have PPID is if a severe attack of laminitis is identified or if a donkey suffers from recurrent bouts of laminitis. Donkeys are notoriously stoical and the pain associated with laminitis may only be displayed very subtly, it is therefore very important to be aware of any behavioural changes or intermittent lameness in your donkey that might be related



to underlying laminitis. Be observant for any changes in your donkey's hoof shape and gait. This can be difficult to notice if the donkey is walking on soft ground so it is always a good idea to walk the donkey on hard standing (see pic for hoof showing laminitic rings).

Other clinical signs include an increased susceptibility to recurrent infections and parasite burdens. Donkeys with repeatedly high faecal worm egg counts should be assessed for the possibility of PPID. PPID also affects body muscle and fat distribution, typically causing a 'pot-bellied' appearance and causing a generalised lethargy. Donkeys are not known for being very active animals but if you think that your donkey is gradually getting less energetic, has a poor demeanour or has experienced a change in body shape then it is worth speaking to your vet about PPID.

It has traditionally been thought that PPID only affects older equines, usually those 15 years or above. However, research carried out over the past few years has indicated that, although, PPID affects older animals to a greater extent, younger animals are also at risk, particularly from the deleterious effects of laminitis.

DIAGNOSIS, TREATMENT AND MANAGEMENT

PPID can often be diagnosed on the basis of results from a single blood test. Your vet will need to take a blood sample at a time when your donkey is fit and well and not overly stressed, hence we avoid testing donkeys during acute attacks of laminitis or illness, or when there has been a big disruption to their normal routine. The blood test is used to measure the levels of a hormone called ACTH, which is produced in excessive amounts when PPID is present. The test results will need to be interpreted alongside the clinical signs that the donkey is demonstrating.

Sometimes the blood test results are unclear as to whether PPID is present. In this situation the vet may advise repeating the test in the autumn, as this is when ACTH levels are naturally higher and any abnormalities in blood levels are more obviously demonstrated. Occasionally a 'dynamic' test will be required, this is when the donkey will need injecting with a substance to stimulate the pituitary gland and two or more blood samples are taken over a short time period. At present the tests used are the same as those performed in horses and ponies.

If it is confirmed that your donkey does have PPID then treatment is available. It is important to be aware that treatment is life-long and will necessitate the costs of daily medication. Blood tests will be required, probably twice yearly once your vet is happy that the donkey has stabilised, to monitor the ACTH levels and response to treatment. The treatment used is a drug called pergolide. This drug is currently licensed in the UK for treatment in horses, marketed as 'Prascend.' Affected donkeys may be too small in weight for Prascend, in which case the vet may prescribe an alternative tablet form of pergolide. Your vet will advise you about any safety requirements, such as wearing gloves, when handling the tablets. Tablets can be given in the food; we have had most success with hiding them in a jam or ginger nut sandwich.

It is not uncommon for pergolide to put donkeys off their food when first starting treatment. This is most often seen in the first few weeks of medicating. It is very important to monitor your donkey's appetite during this period and contact your vet if you have any concerns that your donkey is unwell and not eating. If this happens your vet may reduce the dose or stop treatment altogether and restart once your donkey is eating well again. It can take weeks to months to arrive at the correct dose for any individual donkey and the dose may need adjusting throughout their life. Those donkeys that respond well to treatment should go on to have an improved quality of life with less risk of laminitis and the other debilitating conditions associated with PPID.

EQUINE METABOLIC SYNDROME

WHAT IS IT?

Equine Metabolic Syndrome (EMS) is becoming of increasing importance in equine species and has attracted much interest and research in recent years. The term stems from human medicine, due to similarities with a human metabolic syndrome. In humans, the syndrome refers to a set of risk factors that are associated with development of Type II diabetes and heart disease.

CLINICAL SIGNS

In equines, the syndrome is associated with obesity and insulin resistance. Such insulin resistance is associated with an increased risk of developing laminitis. Ponies and donkeys appear more prone than horses. The obesity is often characteristically regional, cresty necks and fat pads over the rump and trunk may be seen. Laminitis may range from subclinical, with the gradual appearance of laminitic rings on the hooves, or seasonally associated with turnout to pasture, through to severe recurrent painful laminitis.

EMS tends to affect younger animals. However it can occur in older animals and EMS and PPID can occur concurrently.

DIAGNOSIS, TREATMENT AND MANAGEMENT

Testing for EMS can be done using a blood test. Initially your vet may perform a 'basal insulin test.' This is to assess the resting level of insulin in the blood. For the test results to be accurate for your individual donkey it is important that the blood is taken when the donkey is experiencing routine feeding conditions. Unlike horses and ponies it is important not to starve donkeys overnight prior to this test, as they risk developing the dangerous condition, hyperlipaemia. Instead, the blood is usually taken first thing in the morning when the donkey has only had access to straw and no additional feed.

If your donkey displays the clinical signs described above and has a high basal insulin level, EMS may be a likely diagnosis. Not infrequently the basal insulin test can return confusing results and your vet may need to do a 'dynamic' blood test. In this situation you or your vet will feed your donkey a small volume of palatable glucose solution, prior to taking the blood sample.

If your donkey is diagnosed with EMS, dietary management and exercise are the cornerstones of treatment. Whilst it can be much more difficult to persuade a donkey to exercise than a horse, you can encourage daily movement by turning out to an exercise area, which can include a bare paddock and by walking your donkey in hand regularly.

In some situations your donkey may be prescribed medication to assist in treatment. The most commonly used drug is a tablet called metformin and your vet will advise how and when to use this. It is essential to remember though that medication can only aid treatment. Regular exercise and weight loss are the most successful ways of managing this condition. As in other species commonly kept as companion animals it is important to avoid obesity to help maintain your donkey in the best of health.

It is important to be aware of both PPID and EMS if you keep donkeys. Both conditions are significantly associated with laminitis and early recognition and intervention can help to prevent the devastating consequences of this disease.

Our Veterinary team are always happy to consult with vets in practice who are dealing with donkey cases, for vet to vet advice they can be contacted via the main switchboard on 01395 578222.

Owners and carers may also call in on the above number or contact us by email for feeding advice on nutrition@thedonkeysanctuary.org.uk

The Donkey Sanctuary also has a factsheet available on request and for download from our website 'Feeding Donkeys with Endocrine Disorders'.

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THE DONKEY SANCTUARY

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The Donkey Sanctuary was founded by Dr Elisabeth Svendsen MBE in 1969.

The Donkey Sanctuary (registered charity number 264818) and its sole corporate trustee, The Donkey Sanctuary Trustee Limited (Company number 07328588) both have their registered office at Slade House Farm, Sidmouth, EX10 0NU.

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