



Equine Newsletter

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Equine Metabolic Syndrome (part 2 of equine endocrine diseases)

(By Liz Harries MRCVS)

Equine metabolic syndrome (EMS) is a hormonal disorder with that presents with some similarities to Cushings Disease. Frequently, it is overweight Native Ponies that are most likely to be affected but all types and breeds can suffer.

The main role player in EMS is insulin resistance. Insulins' role in the body is to regulate the levels of glucose (sugar) the cells of the body. An increase in insulin usually results in the uptake of glucose from the bloodstream to the cells. Horses and ponies with EMS fail to respond to rising insulin levels as normal and hence glucose remains in the bloodstream. The disorder has many similarities to Type II diabetes in humans. Changes to the way fat is metabolised in the body can also contribute to the disease. Like in Cushings Disease, there is a higher than normal level of the steroid hormone "Cortisol" in the bloodstream.

Clinical Signs:

- Laminitis:
 - The reasons why EMS causes laminitis are not confirmed. It has been suggested that when insulin levels are increased there is a narrowing of blood vessels which with a increased inflammatory response can result in laminitic changes.
- Abnormal Fat Deposits:
 - Typically seen above the eyes, on the crest, over the shoulder and around the tail head.
- Obesity and difficulty losing weight.
- Lethargy
- Excessive drinking and urination.

Diagnosis

Alongside the clinical signs, blood tests can be used to help diagnose the disorder. Usually, samples are taken for insulin and glucose +/- triglycerides (a fat

component). Ponies with EMS will have higher than normal insulin and glucose levels in the blood.



Treatment

The most important factor in management of EMS is control of diet and exercise. Feeds should be well balanced and contain low carbohydrate and calorie levels. Ponies with concurrent laminitis can also benefit from a Biotin supplement which promotes healthy hoof growth.

Regular exercise helps increase the uptake of glucose into the cells and reduce the levels in the blood. However, in ponies with laminitis exercise will not be possible.

There is a commonly used drug which acts similarly to exercise and is often used in ponies which cannot be exercised. "Metformin" causes muscle cells to take up glucose, hence decreasing the levels in the blood. In many cases, initial treatment is carried out with metformin and then dosages of the drug reduced as exercise levels are able to be increased.

Prognosis

The major concern for ponies with EMS is laminitis. As long as the laminitis can be well controlled and outbreaks prevented when with appropriate diet and exercise there is a good prognosis for EMS.



1. Obesity - a characteristic of EMS (Image courtesy of www.nadis.org.uk)

Laminitis

by Sarah Mosley

Laminitis is a serious and sometimes fatal condition which affects horses, ponies and donkeys. It is important to deal with a case promptly to reduce the amount of permanent damage within the hoof capsule. Signs can vary from a 'pottery gate', to severe, uncontrolled pain.

What is laminitis?

Laminitis simply means 'inflammation of the laminae' which are the sensitive layers between the hoof wall and the pedal bone. The pedal bone is suspended by these interlocking laminae. In mild cases that are treated promptly the inflammation is reversible, in severe cases the laminae may lose their blood supply and die, causing the pedal bone to lose its support hence it may rotate or sink, and in very severe cases, penetrate the sole of the foot.

What causes laminitis?

It is a common misconception that the only cause of laminitis is over eating rich grass, however there are many conditions which can cause inflammation of the laminae:

- Overfeeding (of grass or carbohydrates e.g. cereals)
- Quality of grass (e.g. – grass for dairy cattle is generally too heavily fertilized and the wrong species of grass for horses to be grazing - grass which has been stressed by a frost is high in fructans which directly causes laminitis)
- Toxaemia (associated with infections such as colitis and retained placenta's)
- Medicines (e.g. corticosteroids and some antibiotics)
- Concurrent disease (e.g. cushings and equine metabolic syndrome)
- Injury of the opposite limb (which causes excessive weight bearing of the laminitic limb)
- Farriery (neglected feet or poor trimming resulting in a long toe/low heal conformation)
- Excessive concussion (due to fast exercise on hard ground)



What are the signs?

The forefeet are more commonly affected than the hind but all four feet can be affected. The horse, pony or donkey may have a pottery gate, shifting weight between feet, stand with its forelimbs stretched out, walk with its heels bearing most of the weight and struggle to turn but in more severe cases they may be reluctant to move or even stand, have an increased respiratory rate and be sweating. Their hooves may be abnormally warm to the touch and the digital pulses will be increased and in some cases bounding. It can be difficult to find these pulses, ask us while we are with you to show you how to check them as they are a reliable indicator of laminitis.

Chronically or previously affected animals often have hoof changes in the form of laminitic rings. Some cases may have an altered shape of hoof, with the toe growing at a different angle, the heels being long and the sole being convex rather than concave. These cases need remedial farriery based on x-rays to prevent further damage and to help control the pain. Early treatment is crucial so it is important to contact us as soon as you suspect a case of laminitis. All cases require anti-inflammatories plus a variety of other medications and management strategies depending on the cause and the severity.

For more detail on short and long treatment as well as prevention please see next month's newsletter.

Are your vaccinations up to date?

This is just a reminder of the importance of vaccinating against equine flu. With a confirmed case in South Wales in June it is a good to check if your horses are covered.

For more information on equine flu visit:-

<http://www.equiflunet.org.uk/>

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