XL Vets Equine

Fact Sheet

Equine Muscle Disease

Broadly speaking, muscle diseases (myopathies) are either present from birth (genetic disorders) or develop spontaneously during adulthood (acquired disorders). Those present from birth may not be obvious until adulthood.

The medical term for the most common muscular disorder is recurrent exertional rhabdomyolysis (RER), resulting in a syndrome of muscle cramping that occurs during exercise. RER is also known as tying up, setfast, Monday morning disease and azoturia. Horses that experience RER either have an underlying myopathy or have been physically overexerted.

URINE SAMPLES CONTAINING REDUCING AMOUNTS OF MYOGLOBIN (A PRODUCT OF MUSCLE BREAKDOWN)

GENETIC DISORDERS

1. RER

The most common muscle disease, this is likely an inherited trait, affecting 7% of UK racing thoroughbreds. Affected animals will have muscle cramps, be reluctant to move, with sweating and pain in affected muscles. Blood sampling will reveal raised muscle enzymes. Almost all return to athletic function, though this can take from one week to several months for full recovery. Managing a horse with RER requires minimising stress for that horse, supplying the majority of calories as fats not carbohydrates, along with keeping regular exercise and management routines consistent. Medication with Dantrolene can be considered, but is not licensed in horses.

2. Polysaccharide storage myopathy (PSSM)

This disease causes repeated episodes of tying up, often with minimal exercise. Signs may include stiffness, pain, sweating and a reluctance to move, or poor performance, muscle wasting, weakness or back pain. A muscle biopsy is necessary to confirm the diagnosis. PSSM has been reported in Quarter horses, Warmbloods and Draft breeds e.g. Clydesdales, Shires and Irish draughts. A gene mutation is responsible for some cases of PSSM, which can be confirmed on a hair root sample. PSSM is managed by keeping the horse fit, lean and in regular exercise. Access to grazing as much as possible helps reduce the frequency of episodes. High fibre diets with additional oil are recommended, along with a vitamin/mineral supplement.

GENETIC DISORDERS cont:

3. Glycogen enzyme deficiency

A heritable disorder found in Quarter horses and Paints. Affected foals may be aborted, still born or die suddenly. A muscle biopsy is diagnostic and a blood test can help to identify carriers.

4. Hyperkalaemic periodic paralysis (HYPP)

An inherited disorder causing a problem with the movement of potassium in and out of muscle cells. It occurs in Quarter horses, Paints and Appaloosas with bloodlines to the sire Impressive, particularly those well-muscled. Signs include: facial muscle spasms, drooling, sweating, noise whilst breathing, trembling of shoulder, neck and flank muscles, inability to lift head and in some recumbency (lying down unable to rise). Episodes usually only last for up to an hour and sudden death can occur. Triggers include cold, periods of fasting, heavy sedation, anaesthesia and rest after exercise. HYPP is diagnosed by genetics testing of a hair or blood sample. Diets low in potassium are recommended, using a grain-based feed twice daily and keeping them in light regular exercise.

XLEquine **Equine Muscle Disease**

ACQUIRED DISORDERS

1. Fibrotic myopathy
A non-painful cause of mechanical hindlimb lameness most obvious at the walk, where the foot is slammed down to the ground prematurely on each stride. It can be caused by tearing of thigh muscle fibres during excessive exercise or after pulling back abruptly, after intramuscular injections, or due to birth trauma. Surgical management involves cutting the muscle's tendinous attachment under GA, which often improves the condition, although recurrences can occur.

2. Post-anaesthetic myopathy
Due to their size, horses undergoing a general anaesthetic can compress the blood vessels supplying the muscles. This results in swollen, painful muscles, causing great difficulty getting up and remaining standing.

To avoid this, great care is taken to position patients correctly on a well-padded operating table. The anaesthetist also keeps them well hydrated, to help maintain a good blood pressure. Treatment consists of intravenous fluids and pain relief, with intensive nursing care until the patient is able to stand unaided. Heavily muscled, draft-breed horses and very fit horses are more prone to this condition.

3. Atypical Myopathy (AM)
This is a highly fatal disease seen in grazing horses, caused by a toxin in sycamore seeds. Outbreaks occur in the autumn and sometimes in the spring. See the AM factsheet for more details on this condition.

4. Equine Motor Neurone Disease (EMND)
This condition results from a long term (chronic) Vitamin E deficiency, causing severe muscle wastage and nerve damage. As well as marked weight loss, constant weight shifting and muscle tremors are seen and affected animals may have an abnormally high tail carriage. EMND is a rare condition, but occurs in horses without access to grass and fed poor quality hay. Treatment is with Vitamin E but horses with clinical signs rarely recover.

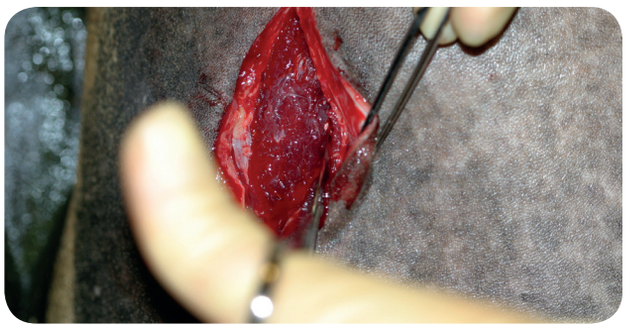
Diagnostic tests

Blood tests These allow the measurement of substances released by damaged muscle. The three muscle enzymes routinely measured are termed CK, AST and LDH. The levels rise and fall at different rates following the initial episode of muscle disease and can be used to aid diagnosis and monitor response to treatment.

Urinalysis The testing of urine for muscle breakdown products (myoglobin). Myoglobin transports oxygen into muscle cells and is released when they are damaged.

Exercise tests Blood sampling to measure CK and AST levels before and four hours after a period of controlled exercise. A mild increase in muscle enzymes after exercise is normal, but above a certain level this is suggestive of muscle disease.

Muscle Biopsy A sample of muscle can be taken in the standing sedated patient for laboratory analysis. Certain muscle diseases have characteristic changes visible under the microscope.



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XLEquine is a novel and exciting initiative conceived from within the veterinary profession made up of independently owned, progressive veterinary practices located throughout the United Kingdom, members of XLEquine are committed to working together for the benefit of all their clients.

For further information contact your local XLEquine practice:

www.xlequine.co.uk