

Azoturia / Tying Up



Exertional Rhabdomyolysis (ERM) is also known as Azoturia, Tying-up, Set-Fast and Monday Morning Disease. ERM is a disturbance of the normal functioning of the muscles in the horse that causes painful cramps and muscle damage. ERM is most often seen when there is an imbalance between exercise and feeding, for example maintaining a high energy diet while suddenly reducing the exercise levels. In some cases, it is caused by a genetic disease: polysaccharide storage myopathy (PSSM).

Clinical signs

The signs that might indicate ERM range from mild (variable drop of performance) to severe (see signs below). Though rare, collapse and death may occur. Episodes of ERM usually start during or just after exercise.

The signs include (variable severity):

- lack of impulsion;
- unwilling to move;
- stiff gait, particularly in the hind legs;
- profuse sweating;
- swelling and hardening of muscles, noticeably in hindquarters;
- dark red/brown urine due to the muscle pigment myoglobin;
- in severe cases the patient may be in extreme pain, which can be confused with colic;
- severely affected patients can develop kidney failure, leading to collapse and death.



URINE SAMPLES WITH INCREASING AMOUNTS OF MYOGLOBIN PIGMENT (NORMAL SAMPLE ON RIGHT)

DIAGNOSIS

A diagnosis of ERM may be suspected on the basis of clinical signs, but can be confirmed with a blood sample. Moderate to marked increased levels of three muscle enzymes abbreviated as CK, AST and LDH are consistent with a diagnosis of ERM.

The blood results can also indicate the degree of muscle damage. In severe cases kidney function should also be assessed and monitored using repeat blood samples. If the condition has occurred previously, your vet may perform a muscle biopsy in an effort to identify an underlying cause.

In mild cases, an exercise tolerance test may be undertaken. This involves measuring muscle enzymes in the blood before and after exercise, suspect cases having an excessive increase in levels in response to exercise.

KEY POINTS:

- ERM has many different names and a range of presenting severity and signs;
- ERM is caused by an imbalance between exercise and feeding;
- signs include a stiff gait and unwillingness to move;
- exercise is a trigger factor;
- do not move an affected animal;
- ERM is a veterinary emergency;
- treatment includes strict rest, painkillers and in some cases intravenous fluids.

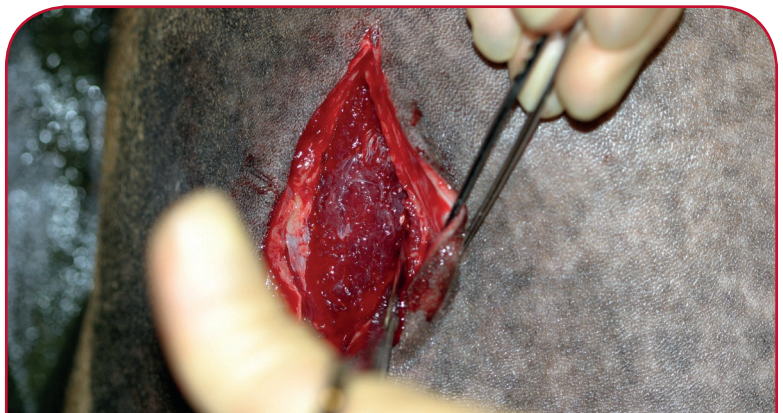
Treatment

This will depend on the disease severity, but will usually involve reducing pain and inflammation, whilst restoring fluid balance in the patient and protecting the kidneys.

- Keep the horse still to reduce further muscle damage and call the vet.
- Provide the horse with water and encourage it to drink.
- Your vet will usually administer phenylbutazone (bute), flunixin or similar potent anti-inflammatory painkillers.
- If the horse is in severe pain or too excitable the vet may use a sedative/painkiller combination.
- In cases of mild dehydration, oral fluids and electrolytes may be sufficient for rehydration. Severely affected cases may receive intravenous fluids.
- Box rest the patient, followed by small paddock turnout or short duration hand walking, until the blood enzyme levels return to normal.
- Very gentle walking exercise, once the pain has resolved, can improve blood flow to the muscles, minimising scar tissue and muscle fibre adhesion formation.
- Blood tests will be used to assess when the patient has fully recovered.
- In cases where there is an underlying condition, this should be corrected or treated where possible.
- Full recovery and a return to full work may take several weeks.

CAUSES

ERM occurs for two main reasons: either the horse has an underlying myopathy, or there is an imbalance between diet and exercise, typically a high energy diet and a sudden exercise reduction. Recurrent ERM is likely to have genetic component in thoroughbreds, affecting 7% of racehorses. Polysaccharide storage myopathy (PSSM) is a genetic disease most commonly reported in quarter horses, warmbloods and draft breeds, causing repeated episodes of ERM, often with minimal exercise. One type can be diagnosed by a hair sample, but in other cases a muscle biopsy is required.



A MUSCLE BIOPSY CAN INDICATE THE UNDERLYING CAUSE IN RECURRENT CASES

PREVENTION INVOLVES:

- a balanced diet with good quality hay;
- a low carbohydrate and high oil diet;
- regular use of electrolytes, not just on competition day;
- minimising stress with a regular routine;
- daily exercise with a regular warm-up;
- low dose of the muscle relaxant dantrolene prior to exercise can be helpful in some horses;
- oestrus control in mares that develop the condition when in season.



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