

RHABDOMYOLYSIS - TYING UP, AZOTURIA, MONDAY MORNING SICKNESS, EXERTIONAL RHABDOMYOLYSIS, PSSM, RER

Tying up in horses is a complex condition that presents with similar clinical signs but can be caused by different syndromes.

What are the signs of rhabdo (muscles) myolysis (breakdown)?

The muscles of the backline and hindquarters (occasionally the shoulder as well) go into a cramp and do not relax. This is an extremely painful condition and the horse becomes reluctant to move their hindquarters and legs. The muscles in spasm become rock hard and the horse's temperature can go up to 40-40.5 degrees centigrade. Shivering and sweating become pronounced and their heart rate and respiratory rate go up in response to pain. They can appear to have signs of colic but palpation and examination of the muscles reveals their hardness and swelling.

With time, the urine goes a red/brown colour from the myoglobin from the damaged muscle cells. If severe enough this can compromise renal function.

How does it present?

It can come on slowly or quickly, mildly or severely.

Rhabdomyolysis is usually a recurring problem with a specific set of circumstances.

- Overfeeding grain when spelling for a few days (Monday morning disease)
- Nervous excitement with travel, showing, competing
- Exercise
- No obvious cause

Diagnosis for tying up is through blood tests looking at levels of creatine kinase (CK) and aspartate transaminase (AST). The levels measured are a reflection of the amount of damage done to muscle fibres.

There are many possible causes of rhabdomyolysis:

- Abnormal carbohydrate metabolism
- Electrolyte (salt) imbalances after or during exercise / dehydration
- Dietary mineral deficiencies and unbalanced mineral ratios
- Buildup of lactic acid from use of muscles
- Insufficient fitness for the activity being expected
- Hormone imbalances - hypothyroidism
- Genetically inherited predisposition to tying up

There are three different syndromes recognised at the present time

1. Sporadic exertional rhabdomyolysis may occur in any horse which a. is pushed too hard too quickly in exercise or b. is overfed grain for the level of work required. These horses tie up with muscle stiffness and cramps and gradually recover over time.
2. Recurrent Exertional Rhabdomyolysis usually starts at a young age in some racing quarter horses, thoroughbreds, standardbreds and arabs. It is a problematic condition with chronic muscle damage over time. There appears to be a higher than normal level of calcium in the muscle cells which leads to constant contraction. It is triggered by exercise and excitement.
3. Polysaccharide Storage Myopathy (PSSM) appears to be of two different kinds
 - a. An abnormal sensitivity to insulin leads to abnormally high storage levels of glycogen in the muscles as well as an abnormal form sugar. These horses are good doers and tend to be quarter horses, paints and appaloosas. It is a dominantly inherited gene that is passed onto foals.

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- b. This occurs in the draft breeds, their crosses and also warmbloods. The exact form of the PSSM in these breeds has not yet been clarified. The clinical signs differ in that there is muscle soreness, reluctance to engage the hindquarters, muscle wasting, weakness, difficulty in backing up and lifting hind feet.

Managing a horse that ties up.

Understanding the dietary and exercise requirements of a horse susceptible to tying up is essential as there are no cures for RER or PSSM.

Dietary Requirements

1. Feed no grain - use vegetable oils as a source of energy
2. Feed ad lib good quality grassy hay or access to adequate pasture. Keep any lucerne content in the hay to a maximum of 50%.
3. A complete and balanced multivitamin and mineral supplement such as Equilibrium Mineral Mix is

ideal for completing the diet.

4. Use Equilibrium B1 Cool Mix for nervous horses to help reduce the incidence of tying up.

Exercise Requirements

Exercise needs to be a consistent structured programme with no rest days. Grade the level of the exercise as fitness increases. Allow for adequate warming up and cooling down times to facilitate the removal of lactic acid from the muscles.

Avoid stress and excitement for horses with RER.

Have ad lib hay available to allow horses to have normal eating patterns - this reduces boredom and frustration and the pain of stomach ulcers.

Treatment of tying up

Seek veterinary advice when your horse ties up in order to learn how to best manage it and prevent it from recurring.

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