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Hypomagnesemia Tetani in Bovine

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Grass tetany, also known as hypomagnesemia or grass staggers, is a serious condition that can be fatal to cattle. It is a metabolic disease that develops when the amount of magnesium in diet drops below what is needed for maintenance (3 mg/kg body weight) and lactation (120 mg/kg milk).

Etiology

When intakes of potassium and nitrogen are high and intakes of sodium and phosphorus are low, absorption from the rumen may be reduced. Hypomagnesaemic tetany is more common in soils that are naturally high in potassium and in soils that have been fertilised with potash and nitrogen, such as chicken dung. occurs in older cows as well as in cows having their first and second calving.

Incidence

- Species incidence-cattle rarely in sheep
- Age incidence -7-10-year-old (5-8 lactation)
- Time incidence-2-4 months after parturition
- Absorption from the rumen may be decreased when potassium and nitrogen intakes are high and sodium and phosphorus intakes are low.

Occurrence

- Highly potassium spring lush pastures and green cereal crop which decrees magnum absorption
- Fed diet intoxicated with potassium fertilizer or urea
- This can arise after a decrease in food intake during inclement weather, during transport, or when cows graze short-grass dominant pastures containing < 0.2% Mg on a dry-matter basis.
- Liveweight losses occur during lactation when there is inadequate magnesium available in the plasma due to body tissues being mobilised during liveweight loss, which is insufficient to maintain lactation. This is caused by low herbage availability (< 1,000 kg dry matter/hectare).

Predisposing factor

- Starvation
- Diarrhea
- Cold weather stress
- Long transport

Clinical sign

Acute form- Sudden inset of hypoesthesia and muscle twitching, staggering in followed by fall down with tetany and convulsion, during episcope (attack), opithotonus (back –head) pricking of ear, nystagmus, retraction of eye lids, champing of jaw, frothing at from mouth. Between episodes animals lie quiet but any noise or touch starting other attack Pulse and respiration accelerated, temperature moderately elevated (due to muscular spas) death from respiratory failure. **Subacute form**- Onset gradual and course longer and **Chronic**- form- have low serum magnesium but shows no symptoms

Diagnosis

- On the basis of History and clinical sign
- Laboratory diagnosis consist- Serum magnesium level commonly between (1-2mg%) (normal 2.5-3 mg%), low urine magnesium level and low CSF magnesium level
- Bone biopsy from ribs commonly revealed disturbed Ca: Mg. ratio.
- **Differential diagnosis**-The disease must be differentiated from other causes of nervous manifestation such as BSE, Rabies, Encephalomyelitis and poisoning

Treatment

- Safe therapy to use combined calcium-magnesium preparation as follow
- Calcium broguconate 15% (I/V 500 ml)
- Followed by magnesium lactate 15% (s/c 250ml)
- Magnesium sulphate (oral 125gram)
- Contraindicated to use Mg compounds alone may also cause cardiac arrest

Prevention and control

- Magnesium supplementation of diet with crude magnesium 60gm/head which can be mixed with molasses.
- Magnesium bullets placed in reticulum for slow liberation of constant traces of magnesium daily for long period as long as several months or even years.