MILK FEVER IN CATTLE

DEPARTMENT OF ANIMAL NUTRITION
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INTRODUCTION

PARTURIENT PARESIS (MILK FEVER, HYPOCALCEMIA)

Parturient paresis is an acute to per-acute a febrile, flaccid paralysis of mature dairy cows that occurs most commonly at or soon after parturition. It is manifest by changes in mentation, generalized paresis and circulatory collapse.

Normal calcium level of dairy cattle 8-12 mg/dl.

When it drops <7.5mg/dl it causes milk fever.

Aetiology

- Cows can suffer from milk fever 20 days before parturition and up to 20 days after parturition.
- Dairy cows secrete 20-30g calcium in the production of colostrum and milk in the early stage of lactation.
- The secretion of Ca causes serum calcium level to decline from normal of 8.5-10mg/dl to<7.5mg/dl.
- The sudden decrease in serum calcium level causes hyperexcitability of nervous system and reduced strength of muscle contraction resulting in both tetany and paresis.
- It can be seen in cows of any age but is most common in high producing cows entering their third or later lactations.
- Incidence is higher in holstein friesian cows.

CLINICAL FINDINGS AND DIAGNOSIS

- It usually occurs 72 hrs after parturition.
- It can contribute to dystocia, uterine prolapse, retained placenta, abomasal displacement and mastitis.
- It has 3 stages
- In **first stage :** animals are ambulatory but show signs of hypersensitivity and excitability.
- Cows may appear restless, shuffling their rear feet due to lack of muscle coordination, twitching and bellowing.
- Blood Ca levels usually goes to 6.5-8mg/dl.
- **In stage 2:** animals are unable to stand but can maintain sternal recumbency. Cows are obtunded, anorectic, and have a dry muzzle, subnorn1al body temperature, and cold extremities. In this stage, blood Ca level will be about 4.5-6mg/dl.
- S-shaped curve to the neck may be noted.

- **In stage 3:** cows lose consciousness progressively to the point of coma.
- As cardiac output worsens, heart rate can approach 120 bpm, and peripheral pulses may be undetectable.
- Bloat, laying out flat, flaccid muscles and risk of death may occur.
- Blood Ca levels will be <4.5mg/dl.

Causes

- A depression of the level of ionized calcium in tissue fluids.
- Excessive drainage of calcium in the milk just after parturition.
- Excessive loss of calcium in the colostrum beyond the capacity of absorption from the intestine and mobilization from the bones to replace .
- An impairment of absorption of calcium from the intestine at parturition.
- Deficiency of vit. D and less acidic pH in gut.
- Parathyroid gland is not functional during the time of parturition.

TREATMENT

- Treat the animals as early as possible before the cow become recumbent.
- Bring the animals to sternal recumbency until treatment is available.
- Bring the recumbent cows from slippery floors to non-slippery areas.
- If the animals are lying in the open ground, erect a temporary shelter to protect from sun light.
- Immediately after evidence of milk fever signs and recumbency, consult with qualified veterinarian for calcium administration .
- Calcium borogluconate -25% 250 ml slow intravenous injection 10-20 drops/minutes.
- Compounds containing cal-mg-boro-gluconate-200 to 350 ml I/V followed by S/C for rest of dose.

Prevention Method

- A diet containing less than 20gm of calcium per day should be fed during the last two weeks prior to calving to prevent milk fever.
- Avoid excess calcium intake during the dry period. Diet containing less than 80 to 100gm/ day of calcium throughout the dry period may be fed to prevent milk fever
- Phosphors intake of less than 35gm/day may be the standard level for the prevention of milk fever
- High phosphors and low calcium level during the last month of pregnancy may be maintained to prevent milk fever (Ca:P =1:3.3).
- High calcium containing gels can be fed to the cattle just after parturition and after 24 hrs of parturition.(calp gel)

THANK YOU