

Successful Management of Milk Fever in Dairy Cattle: A Case Report

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Abstract: Milk fever or parturient paresis is a important metabolic disease of high producing dairy cattle usually occur within one or two days after calving cause huge reduction in milk production. For that reason the disease becomes economically important. The disease can also be a cause of acidosis, ketosis, mastitis, retained placenta, displaced abomasum and metritis. In the present study we discuss about the clinical management of milk fever diseases. A six years old halstein-frisen cross cattle having approximately 350 kg b. wt was presented to animal health camp held in Burdhaman district (West Bengal) with a history of prolonged recumbent and reduced appetite. The cattle had calved 15 days ago. Deworming and vaccination status was irregular. On physical examination animal was revealed emaciated, depressed and lethargic. And on clinical examination there was mild hyperthermia (105°F), increased heart rate and respiratory rate. The cattle was on lateral recumbancy and complete unable to stand. The case was diagnosed as milk fever and the animal treated with 300 ml of injection mifex intravenously by slow infusion to restore the blood calcium level and 1000 ml of normal saline solution intravenously to correct the dehydration for consecutive 2 days. After 3 days the owner informed that the cattle started to feed and able to stand slowly.

Keywords: Dairy cattle, milk fever, clinical management

1.Introduction

Milk fever or parturient paresis is the most common metabolic disease of mature dairy cattle mostly occur just before or soon after calving (Mulligan et al.2006b; Radostits et al.2007; Faez Firdaus Jesse Abdulla et. al., 2014). The disease has been discussed over 50 years of extensive research in the dairy industry and focus has been on the epidemiology, pathogenesis and risk factors (DeGaris & Lean 2008). Studies have shown that periparturient health disorders not to be totally independent events, but rather a complex of interrelated disorders (DeGaris & Lean 2008; Drackley et al.2005; Mulligan & Doherty, 2008). Age, breed, pertunutrition, number of parity, milk production levels and genetic predisposition have been considered as determining factors in the pathogenesis of milk fever (Horst RL et. al., 1997; Roche JR and Berry DP, 2006; Mulligan et al.2006b). Based on the clinical presentation of the animal three stages of milk fever are identified. In stage I, the cow able to stand but staggers due to weakness of the muscle. In stage II, the cow is on sternal recumbency with twisting or curving of the neck towards the flank, while in stage III, the cow suffers from paralysis leading to coma and death (Hutjens MF, 2005; Faez Firdaus Jesse Abdulla et. al., 2014) in which stages I and II are easily Managed but in the case of stage III advise to cull the animal. Cattle affected with milk fever is managed by slow intravenous infusion of calcium borogluconate into the jugular vein. Prevention of milk fever involves several keys including dietary calcium restriction in the close-up dry period, regulation of the ratio of Ca and phosphorus (P) in rations, feeding the animals with different mineral salts, vitamin D, metabolites or synthetic analogues, intramuscular and intravenous parathyroid hormone (PTH) applications and increasing the rate of ration acidity, feeding of calcium-rich rations 3–4 days before parturition, vitamin D supplementation, reducing the dietary cation–anion difference and magnesium supplementation in the late

gestation period (Goff, 2008; Mulligan et al.2006b; Patel VR et. al., 2011; Chiwome et. al., 2016; Nese Kocabagli, 2018). High milk yielding cattle are more susceptible to milk fever due to the high demands in calcium resulting to metabolic disease in dairy cattle. Milk fever mostly occurs during calving and extends up to the peak of lactation within 6 to 8 week of post partum (Hutjens and Aalseth, 2005). The prognosis of milk fever depends on the stage of the condition and the recovered cattle become more susceptible to other metabolic disease (Anteneh et. al., 2012).

2.History and Clinical Symptoms

A six years old halstein-frisen cross cattle having approximately 350 kg b. wt was presented to animal health camp held in Burdhaman district (West Bengal) with a history of prolonged recumbent and reduced appetite. The cattle had calved 15 days ago. Deworming and vaccination status was irregular. On physical examination animal was revealed emaciated, depressed and lethargic. And on clinical examination there was mild hyperthermia (105°F), increased heart rate and respiratory rate. The cattle was on lateral recumbancy and complete unable to stand [Figure 1].



Figure 1: Cattle on Lateral recumbancy with complete inability to stand

3. Diagnosis & Treatment

In the current case differential diagnoses were milk fever, hypoglycemia and metabolic acidosis. But based on the clinical history of high milk yielding, improper nutritional management after interviewing of cattle owner, presented clinical symptoms and physical examination the case was tentatively diagnosed as milk fever.

The cattle was treated with 300 ml of injection mifex intravenously by slow infusion to restore the blood calcium level and 1000 ml of normal saline solution intravenously to correct the dehydration for consecutive 2 days. After 3 days the owner informed that the cattle started to feed and able to stand slowly. But due to mild weakness the animal unable to stand for long time. And the owner was advised to give calcium rich diet to the cattle.

4. Discussion

Milk fever or Parturient paresis is a common metabolic disease of high yielding dairy cattle having adverse effect on the welfare and economy by reducing milk production. In case of most clinical cases the disease is cure after treatment with intravenous infusion of calcium salt solutions but the cattle become more susceptible to other metabolic and infectious diseases (Curtis *et. al.*, 1983; Curtis *et. al.*, 1984). There are several predisposing factors have been suggested (Charbonneau *et. al.*, 2006; Lean *et. al.*, 2006). To prevent milk fever high priority has been given in many countries and several milk fever control principles and factors have been reported in database. It has been suggested that specific control program is applicable when the incidence of milk fever increases above 10% among high-risk dairy cattle (Allenstein, 1993). Most recommended measures are supplement of easily absorbed calcium throughout calving followed by feeding of acidifying rations by anionic salt supplementation during the last weeks of pregnancy (Hutjens and Aalseth, 2005). Feeding low calcium rations during the last weeks of pregnancy and pre-partum administration of vitamin D. In present case the cattle was effectively treated by intravenous administration of calcium salt and recovered.

5. Conclusion

In the present study poor management, improper dietary ration supplement is most significant cause of milk fever. That's why, the cattle owner was advised to formulate proper dietary ration and provide of mineral supplements to their dairy cows.

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