Biological Forum – An International Journal **14(2): 812-814(2022)**

ISSN No. (Print): 0975-1130
ISSN No. (Online): 2249-3239

Milk Fever in a Crossbred Cow and its Medical Management

Arul Sabareeswaran T. A., Kavin T. and Alimudeen S.*
SR Dairy Farms, Thuraiyur, Tiruchirappalli, (Tamilnadu) India.

(Corresponding author: Alimudeen S.)*
(Received 01 March 2022, Accepted 05 May, 2022)
(Published by Research Trend, Website: www.researchtrend.net)

ABSTRACT: India is an agricultural country and livestock plays a vital role in one of the fastest-growing segments in the agriculture and economic sector of the country. About 5.1 percent GVA (Gross Value Added) and 17.1 percent of Agricultural and allied GVA of India is contributed by livestock. India stands first in the overall milk production in the world with a total production of 198.04 million tonnes during 2019-2020. The annual growth rate of 5.68 % was observed during the last financial year. But the world average growth of this sector is 2.4%. The Indian dairy sector is changing from traditional to commercial dairy farming. Hence, high-yielding dairy animals are necessary to sustain the requirement of dairy sector. High yielders are more prone for various metabolic diseases such as ketosis, milk fever. Milk fever is one of the major threats to the fastest-growing Indian dairy sector.

An Adult Crossbred Jersey cow aged about three years was diagnosed with Milk fever which was maintained at SR dairy farms in Thuraiyur, Tiruchirappalli district of Tamilnadu. The animal had a history of calved twenty hours before and was unable to stand observed by the farm attenders. Upon clinical examination, the animal was at lateral recumbency, per rectal temperature was about 101.2 F, with cold extremities and bloated appearance. On physical examination all other vital parameters were normal. Pupillary light reflex was also absent. The animal was diagnosed withmilk fever and treatment was done by slow infusion of calcium borogluconate @ 1 mg per 45kg bodyweight intravenouslyto restore the animal

The animal recovered after the treatment with a good prognosis and supplements were given for seven days and the animal had an uneventful recovery.

Keywords: Calcium, Crossbreed cow, Milk fever, Deficiency, Hypocalcemia, Parturient paresis, Medical management, High yield.

INTRODUCTION

Milk fever or Parturient paresis or Hypocalcemiais a metabolic disease most commonly occurring in adult females before or after parturition, commonly occur within 48 hours of parurition. There is a rapid decline in plasma calcium level from eucalcemic level for the formation of colostrum and also low calcium absorption from the intestines due to reduced feed intake and improper calcium-phosphorus ration in diet with vitamin D deficiency (Deniz, 2007). High-yielding Cow and Buffalos are commonly affected. Milk fever may also result in the downer cow syndrome, grass tetany, ketosis, udder edema, abomasal displacement, metritis, and poor fertility (Peter *et al.*, 2007).Its clinical symptoms include sever muscle weakness, Sternal or Lateral recumbency with predominant Sub-normal temperature. Milk fever causes serious Economical loss to farmers, as it might lead to dystocia and even uterine prolapse (Rajadurai *et al.*, 2021).With this background, the present case study deals with the Successful medical management of Milk fever in a Crossbred Jersey cow.

CASE HISTORY AND CLINICAL FINDINGS

An Adult Crossbred jersey cow of age about three years was diagnosed with Milk fever which was maintained at SR dairy farms in Thuraiyur, Tiruchirappalli district of Tamilnadu. The animal had a history of calved twenty hours before and was unable to stand observed by the farm attenders. Upon clinical examination, the animal was at Lateral Recumbency, per rectal temperature was about 101.2 F, with cold extremities and Bloated appearance. On physical examination all other vital parameters were normal. Pupillary light reflex was also absent. Based on the animal's history and clinical symptoms, it was diagnosed as Milk fever and the necessary treatments were started immediately without further delay.

Fig. 1. Animal on lateral recumbency.

Fig. 2. Intravenous administration of calcium borogluconate.

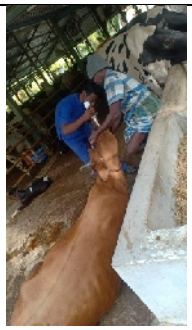

Fig. 3. Oral administration of Calcium

Fig. 4. Recovery of the animal after treatment.

TREATMENT

The cow was treated with calcium borogluconate @ 1 mg per 45kg bodyweight intravenously for hypocalcemic condition. The signs of Milk Fever disappeared within thirty minutes after the administration of calcium borogluconate hence the prognosis was good. To prevent the reoccurrence of hypocalcemic condition the attenders were advised to give oral calcium supplements @ 100mL/ day for seven days.

DISCUSSION

Milk fever is one of the commonest disease conditions occurring in cattle and buffalos during parturition. The probability is high in adult animals ageing 5-10 years. Based on the time of occurrence, Parturient paresis can classified into prepartum, postpartum and subclinical hypocalcemia. It's mainly due tothe low serum calcium levelas a result of calcium loss in colostrum formation, reduced intestinal absorption, insufficient mobilization of calcium from the storage pool during the parturition. 6 percent of dairy cattle in the US are affected by hypocalcemia which is characterized by extremely low blood calcium concentration (Oetzel and Goff 1998). Metabolic diseases are common in high-yielding dairy cows during the periparturient period (Hibbs, 1950; Chiwome *et al.*, 2017). Calcium homeostasis is very difficult to maintain in these animals during this period because of physiological and pathological factors. This can lead to the development of milk fever, which predisposes the animal to a variety of other disorders (Fikadu *et al.*, 2016).

Farmers must be educated about proper ration formulations and the importance of mineral supplements to their dairy cows hence poor feeding and dietary deficiency are the primary predisposing factor for milk fever in cows (Rajadurai *et al.*, 2021). As per Goff *et al.* (1989), intravenous administration of parathyroid hormone prevents parturient paretic hypocalcemia in dairy cows. Six and three days before calving the animal may be administered with 25-hydroxycholecalciferol and its synthetic analog 1α-hydroxycholecalciferolto prevent the milk fever (Murray *et al.*, 2008). In the present case, the cow was affected with a stage two milk fever, which was identified by sternal recumbency and curving of the neck to the side. Stage one and two milk fever can be treated effectively by intravenous administration of calcium. However, stage 3 milk fever is difficult to treat especially when muscle paralysis has been ensured (Hutjens and Aalseth 2005).

CONCLUSION

Milk fever may be prevented by providing balanced ration and proper calcium supplements to the animal especially before and after parturition period. It will minimize the chance of economic loss faced by farmers due to Parturient paresis. Improper feeding and abundant feeding of calcium during the last trimester of pregnancy may lead to Parturient paresis. Awareness must be created about scientific feeding practices among the producers and farmers. Hence, post-parturient hypocalcemia is a metabolic disorder it can be controlled to great extent by proper managemental activities.

REFERENCES

DeGaris, P. J. and Lean, I. J. (2008). Milk fever in dairy cows: A review of pathophysiology and control principles. *The veterinary journal*, *176*(1): 58-69.

Fikadu, W., Tegegne, D. Abdela, N. and Ahmed, W. M. (2016). Milk fever and its economic consequences in dairy cows: a review. *Global Veterinaria*, *16*(5): 441-452.

Goff, J. P., Kehrli Jr, M. E. and Horst, R. L. (1989). Periparturienthypocalcemia in cows: prevention using the intramuscular parathyroid hormone. *Journal of dairy science*, *72*(5): 1182-1187.

Hutjens, M. F. and Aalseth, E. P. (2005). Caring for Transition Cows. *Hoards Dairyman Books. Illustrated*. 17-21.

Murray, R.D., Horsfield, J. E. McCormick, W. D. Williams, H. J. and Ward, D. (2008). Historical and current perspectives on the treatment, control, and pathogenesis of milk fever in dairy cattle. *Veterinary Record*, *163*(19): 561-565.

Oetzel, G. R. and Goff, J. P. (1998). Milk fever (parturient paresis) in cows, ewes, and doe goats. Current veterinary therapy. 4.

Rajadurai, A., Chinnamani, K., Singh, D. and Kumaravelu, N. (2021). Medical management of milk fever in a crossbred cow. *Asian Journal of Dairy and Food Research*, *40*(3): 299-300.

Chiwome, B., Kandiwa, E. Mushonga, B. Sajeni, S. and Habarugira, G. (2017). A study of the incidence of milk fever in Jersey and Holstein cows at a dairy farm in Beatrice, Zimbabwe. *Journal of the South African Veterinary Association*, *88*, 1–6.

Hibbs, J. W. (1950). Milk fever (parturient paresis) in dairy cows—a review. *Journal of Dairy Science*, *33*(10): 758-789.

Deniz, A. (2022). Blood Ions and Total Calcium in Dairy Cows: A Correlation Paradox. *Anatomy and Physiology*, *12:* 377.

Radostits, O. M., Gay, C. C., Blood, D. C., & Hinchcliff, K. W. (2000). A textbook of the diseases of cattle, sheep, pigs, goats and horses. *Veterinary medicine*, *9*, 603-700.

How to cite this article: Arul Sabareeswaran T. A., Kavin T. and Alimudeen S. (2022). Milk Fever in a Crossbred Cow and its Medical Management. *Biological Forum – An International Journal*, *14*(2): 812-814.