PARTURIENT PARESIS AND ITS RELATIONSHIP WITH HYPOPHOSPHATEMIA

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One of the most important disorders in veterinary science and particularly dairy cattle is metabolic or production diseases. Milk fever, Downer Cow Syndrome, Postparturient hemoglubinuria and Hypomagnesemia are the examples of these diseases. Some investigators indicated that cows with Milk Fever are severely hypocalcemic (plasma calcium <5 mg/dl) and usually hypophosphatemic (plasma inorganic phosphorus <2 mg/dl) when they are initially treated (1). But author was observed some cases (35 percent of cases) in Shahrekord areas (IRAN) that suffered from M.F and were not responded to standard initial treatment with 8 to 12g calcium gluconate salts (by slow I.V. injection). Therefore, some veterinarians used excessive calcium and made a complicated case, forcedly. In this manner and to determine the cause, blood samples were taken from jugular vein of 35 parturient dairy cattle in Winter and Spring 1999, that suffer from M.F (before treatment), for measuring the levels of calcium, phosphorus and magnesium and then compared results with control values of 35 healthy parturient cattle in shahrekord area. Blood samples were stored in red capped venoject and centrifuged rapidly after delivery to laboratory. Serum concentrations of above minerals were determined by autoanalyser (RA-100, Technicon USA). Data's were studied statistically by T student test at the level of $P<0.05$ by SPSS program. Results indicated that serum levels of calcium and phosphorus were moderately (7.68 ± 0.53) and highly (2.51 ± 1.44) decreased respectively, and magnesium concentration (2.84 ± 0.40) was significantly increased with the comparison of control values. ($P<0.05$)

Author concluded that, hypophosphatemia is a major cause of prolonged sternal recumbency and poor response to routine therapy for M.F in this area, and it is thought that this results in a cow that fail to rise after routine treatment. Some investigators were explained that some cases of M.F. might not respond to calcium injections even though the serum calcium levels return to normal but may appear to recover when the udder is inflated and serum phosphorus levels rise (2). It seems that the main cause of initial recumbency in this area is the summation of severe hypophosphatemia and existing mild hypocalcemia. Thus poorly response to routine treatment is related to hypophosphatemia and its potential effect on clinical pictures of disease. Thereafter veterinary clinicians in Shahrekord area may consider sodium phosphate as a complementary treatment in M. F cows.

References

1. Cheng, Y., et al: Restoring normal blood phosphorus concentrations in hypophosphatemic cattle with sodium phosphate. Veterinary Medicine, April, 383-388.
2. Radostits, O. M. et al (2000): Veterinary Medicine. A Textbook of the Diseases of Cattle, Sheep, Pigs, Goats an Horses. W.B. Saunders. PP: 1420-1440.