

RESEARCH PAPER

Effect of mineral supplementation on serum calcium and phosphorus level in red Kandhari cows

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ABSTRACT

The present investigation was carried out to study the stages of parturition in 14 Red Kandhari advance pregnant (10 m) cows, selected from the Red Kandhari Research Instructional Farm, College of Veterinary and Animal Sciences, Parbhani. Group-I (n=7, treatment group) those animal showing Ca and P level below normal range and Group-II (n=7, control group) including those animals with serum Ca and P level within normal range. Group-I was given orally mineral supplement (Avion powder) 250 g before and after 7 day of parturition. In the present investigation, serum Ca, P level before 7 days of parturition in group I, II were 10.63 ± 0.18 , 6.05 ± 0.2 mg/dl, 11.50 ± 0.24 , 6.21 ± 0.11 mg/dl, respectively. At the time of parturition the average Ca, P level in group I and II were 11.03 ± 0.11 , 5.97 ± 0.09 , 10.50 ± 0.17 , 5.87 ± 0.16 mg/dl, respectively and after 7 days of parturition the average serum Ca, P level in group I and II were 10.71 ± 0.21 , 5.70 ± 0.07 , 9.67 ± 0.18 , 5.48 ± 0.14 mg/dl, respectively. There was highly significant increase in serum Ca, P level ($P > 0.05$, 0.01) in group I as compared to group II. In treatment group there was no any case of retention of placenta, hypocalcemia, prolapse, while in group II these were cases of retention of placenta.

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Lack of available dietary calcium and phosphorus during advanced pregnancy and subsequent excessive drainage of same in colostrum and milk at the onset of lactation be the predisposing factors for hypocalcaemia and hypophosphataemia (Singh *et al.*, 1974). In reproductive health turn is not possible without proper mineral supplementation in their diet as most of the roughages, green, concentrates and even most of commercial feeds offer to Indian livestock are deficient in one or more of the mineral element (Upadhyay *et al.*, 2006). Mineral play an intermediate role in the promotion of action of hormones and enzymes at sub-cellular levels in an integrated fashion (Dhoble and Gupta, 1986).

The present investigation was carried out to study the effect of mineral supplementation on serum calcium and phosphorus, 7 days before and after parturition in Red Kandhari cows.

MATERIALS AND METHODS

The present study was carried out at the Red Kandhari Research and Instructional Farm, COVAS, MAFSU, Parbhani and present estimations were carried out at the Department of Animal Reproduction, Gynaecology and Obstetrics, Parbhani. For the present study, pregnant Red Kandhari cows were selected by screening per-rectally. Gynaecological examination of all

pregnant cows were carried out and the animals those were apparently healthy. 14 advanced pregnant cows (10 months) were selected. 14 cows were divided into two groups, group I (n=7) were fed mineral feed supplement orally and group II (n=7) were kept as untreated control group. Group I were given orally mineral feed supplement daily 250 g before and after 7 days of parturition.

The 14 cows were divided into two groups, those animals which shown serum calcium and phosphorus level below normal range *i.e.* (9.7-12.4mg/dl and 5.6-6.5mg/dl) were taken in group I (n=7) *i.e.* Treatment group and those animals which shown serum calcium and phosphorus level within normal range were taken in group II (n=7) and were kept as untreated control group. Group I was given orally mineral feed supplement daily 250 g (Avion powder) before and after 7 days of parturition.

Blood samples from the experimental animals were collected in the morning hours. Blood samples were collected aseptically from jugular venepuncture of all experimental cows before and after 7 days of parturition and also on the day of parturition. The all venous blood samples were collected in a clean and sterilized test tube for serum separation. Serum samples were centrifuged at 300 rpm for 10 minutes. After separating from the clot, stored at -20°C until used for biochemical estimations.

The serum calcium and phosphorus was estimated by o - cpc end point method using Auto analyzer slim