

CLINICO-BIOCHEMICAL AND THERAPEUTIC STUDIES IN POST-PARTURIENT HAEMOGLOBINURIA IN BUFFALOES

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ABSTRACT

The study was conducted on 50 clinical cases of post-parturient haemoglobinuria in buffaloes along with 15 healthy animals each from villages and organized farms. Post-parturient haemoglobinuria was recorded mostly in milch buffaloes kept under village conditions. No incidence of disease could be recorded from organized dairy farms. The disease was mostly found in lactating buffaloes (84%) between 3rd to 6th lactation (94%). Some animals (16%) were in advanced pregnancy. Haemoglobinuric buffaloes passed red or coffee colored urine and manifested partial or complete anorexia, straining during defecation and anemia. The diseased animals had significantly low haemoglobin, packed cell volume and inorganic phosphorus. Therapy with sodium acid phosphate along with ascorbic acid was found to be highly effective as compared to sodium acid phosphate alone.

Key words: Phosphorus, haemoglobin, PCV, haemoglobinuria, buffaloes

Post-parturient haemoglobinuria (PPH) is an acute disease of cattle and buffaloes characterized by severe intravascular haemolysis, haemoglobinaemia, haemoglobinuria, anaemia and death due to anaemic anoxia. It is emerging as a potent threat to buffaloes in India and other buffalo rearing countries of the world. Predisposing factors for this condition are thought to be advanced pregnancy, recent parturition, high milk yield, presence of oxidants in feed and other stress factors. Deficiency of inorganic phosphorus in blood is a constant finding and cases respond to phosphate therapy (Nagpal *et al.*, 1968, Malik and Goutam, 1971, Gahlawat, 1998). Apart from phosphorus deficiency, oxidative stress is also responsible for red blood cell membrane alterations and subsequently to haemolysis. Therefore, vitamin C can be the part of therapy to reduce the oxidative stress.

MATERIALS AND METHODS

The present study was conducted on 50 clinical cases of PPH in buffaloes from Haryana and adjoining areas. For comparison, apparently

healthy lactating, non-pregnant buffaloes maintained under village conditions and in organized farms were kept as controls. Therapeutic trial in diseased buffaloes was conducted in two groups. Animals in group I (n=25) were given sodium acid phosphate 80 gm i/v as 20% solution and 80 gm orally once daily, while group II animals (n=25) were administered 50 gm sodium acid phosphate plus 7.5 gm ascorbic acid i/v as 20% solution and 50 gm sodium acid phosphate orally once daily till the recovery. Blood samples were collected by jugular venipuncture in sterilized vials containing heparin as anticoagulant on day zero (before treatment) and 24, 48 and 72 h after start of treatment. Haematological parameters (haemoglobin and packed cell volume) were estimated as per the method described by Schalm *et al.* (1975). Inorganic phosphorus (Pi) levels in serum were estimated as per the method of Taussky and Shorr (1953).

RESULTS AND DISCUSSION

Post-parturient haemoglobinuria was recorded mostly in milch buffaloes kept under village conditions. No incidence of disease could

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