

## Therapeutic Management of Post-parturient Hemoglobinuria in a Buffalo

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### Abstract

A Murrah buffalo had calved fourth time three days ago was presented with signs of anorexia, dullness and passing dark red coloured urine. The rectal temperature was normal, conjunctival mucous membrane was pale to pink and heart rate was slightly elevated. Serum biochemical and hematological findings revealed hypophosphatemia. Based on history, clinical signs, clinical findings serum biochemical and hematological findings and response to treatment, the case was diagnosed as post-parturient hemoglobinuria. The buffalo was treated with Phosphorus injection and orally and hematinics. Complete recovery was demonstrated and appreciated after four days of treatment under inpatient observation.

**Keywords:** Buffalo; red urine; hypophosphatemia; management

### Introduction

Post-parturient hemoglobinuria is a metabolic disease of multifactorial etiology which includes dietary phosphorous deficiency, feeding with cruciferous plants like brassica, cabbage, turnips etc. and fodders like berseem, sugarbeet (Heuer and Bode, 1998). It is an acute metabolic disease in high yielding buffaloes associated with hypophosphatemia (Kurundkar *et al.*, 1981) and recorded in buffalo rearing countries particularly in India, Pakistan and Egypt (Pirzada and Hussain, 1998). Parturient hemoglobinuria is characterized by intravascular hemolysis, hemoglobinuria, severe anaemia and death due to anemic and anoxia (Singari *et al.*, 1991). Infectious agents like babesiosis, anaplasmosis, leptospirosis, bacillary hemoglobinuria due to *Cl. haemolyticum* also results in hemoglobinuria (Radostits *et al.*, 2010). Among these, phosphorous deficiency in high yielding milch buffaloes during early stage of lactation is widely believed to be associated with post parturient hemoglobinuria. The present report narrates successful medical management of post-parturient hemoglobinuria in a graded Murrah buffalo.

### History and Observations

A female graded Murrah buffalo in her fourth calving had calved three days back was presented with

history of anorexia, dullness and passing dark red colored urine. The buffalo was regularly fed with dry roughage, little quantum of green fodder and locally available concentrate. General clinical examination and observation revealed rectal temperature of 38.7°C, rumen motility of 1 per 2 minute, heart rate of 78 per minute, respiration rate of 24 per minute with mild dyspnea and pale to pink conjunctival mucous membrane.

### Diagnosis

Hemato-biochemical analysis showed hemoglobin level of 4.5 g/dl, packed cell volume of 16 percent and serum phosphorus level of 1.9 mg/dl. Blood smear examination revealed negative for hemoprotozoan diseases. Urine and serum examination result showed negative for leptospirosis. No endoparasitic infection on faecal sample analysis. Urine analysis revealed elevated urobilinogen.

### Treatment and Discussion

The buffalo was administered with intravenous injection Urimin<sup>a</sup> at 60 ml and Sodaphos<sup>b</sup> at 50 grams orally per day for three consecutive days. Injection Feritas<sup>c</sup> was given at 1 ml/50 kg b.wt. intramuscularly for first day and Feritas<sup>c</sup> bolus at 2 per day orally for next three days. The serum phosphorous level was significantly low (1.9 mg/dl) suggestive of hypophosphatemia which concurred the findings of Durrani *et al.* (2010) and Mahmood *et al.* (2013). Early lactation is often associated with hypophosphatemia leading to reduced ATP content in RBC thereby increasing fragility and intravascular

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## Post-parturient hemoglobinuria



Fig. 1: Buffalo with dark red colored urine



Fig. 2: Urine colour before treatment



Fig. 3: Urine colour after recovery

hemolysis leads to hemoglobinuria (Wang *et al.*, 1985 and Singari *et al.*, 1991). The hypophosphatemia is commonly encountered in 2-4 weeks after parturition (Stocdale *et al.*, 2005). Durrani *et al.* (2010) reported highest prevalence of parturient hemoglobinuria in buffaloes within four weeks of parturition (78%). The patient data and history were in agreement with above reports. Signs of recovery like urine colour to normal, improvement in appetite, milk production and hemato-biochemical parameters (Hb : 7.1 g/dl, PCV : 26 percent and serum phosphorous level to 4.0 mg/dl) were observed. The improvement in hemato-biochemical were in agreement with findings of Radwan and Rateeb (2007) and Mahmood *et al.* (2013).

In conclusion, an acute post parturient hemoglobinuria associated with nutritional hypophosphatemia due to intake of fodder grown on phosphorous deficient soils in early lactation period can be successfully treated by phosphorous administration with concomitant supportive therapy resulted in uneventful recovery.

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