Case Report

CLINICO-THERAPEUTIC MANAGEMENT OF COLOSTRUM INDIGESTION IN MURRAH BUFFALO

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ABSTRACT

A six year old female buffalo was presented with history of parturition before 4 days and accidental feeding of about 4 litres own colostrum by the owner. Clinical examination revealed anorexia, circling, excitation and wandering behavior, mucoid hard sticky feces, absence of water intake and ruminal atony. pH of ruminal fluid was 8.5. The buffalo was successfully treated with vinegar, multivitamin, chlorpheneramine maleate, calcium sulphate, magnesium sulphate and fluid therapy and recovery was seen on 3rd day. In conclusion, colostrum feeding in adult buffalo can cause alkaline indigestion which can be successfully treated with vinegar and supportive fluid therapy.

Keywords: Colostrum, alkaline indigestion, buffalo, acetic acid, casein, pH

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Indigestion resulting from change in pH of ruminal fluid exceeding 7.5 is referred to as alkaline indigestion or ruminal alkalosis (Vijayakumar *et al*., 2010). The range of pH in alkaline indigestion remains 7.5 to 9.5 (Chakrabarti, 2014). Kumbhar *et al*. (2018) reported occurrence of alkaline indigestion in 16.98% cattle. The concentration of casein protein is higher in colostrum than in milk (Madsen *et al.*, 2004). When more quantity of colostrum is fed to ruminants, it can lead to production of more amount of ammonia inside the rumen due to high amount of protein content in colostrum which leads to alkalosis condition (Jadhav *et al*., 2022).

A six year old female Murrah buffalo was presented to Department of Veterinary Clinical Medicine, COVAS, Parbhani

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with anorexia, dehydration, dry muzzle, restlessness, circling movements, wandering behaviour, staggering gait, in coordination and excitation with mucoid hard and sticky faeces. On anamnesis reported parturition before 4 days and feeding of buffalo's own colostrum (about 4 litres) on the day of parturition. The buffalo was earlier treated at local veterinary dispensary brought to veterinary polyclinic. Clinical examination of affected buffalo revealed alkaline ruminal pH 8.5 (Fig. 1) along with subnormal body temperature (98.6° F), impacted rumen, congested ocular mucous membrane (Fig. 2), serous nasal discharge, hard and sticky faeces (Fig. 3), absence of urination, increased pulse and respiration rates. Hematological examination resulted neutrophilia and lymphocytopenia. The case was diagnosed as alkaline indigestion on the basis of alkaline rumen pH 8.5 and history of feeding of 4 litres of colostrum.

On first day, the buffalo was treated with vinegar (5% acetic acid) @ 300 ml PO single dose to neutralize the ammonia accumulated in rumen (Kumbhar *et al*., 2018), inj. dextrose 5% @ 4 litres IV BID daily till recovery to dilute the concentration and fasten excretion of the ammonia from body, inj. neuroxin M (methylcobalamin, vitamin B2 and Nicotinamide) @ 10 ml IM for 3 days given as nerve tonic and metabolism, inj. chlorpheneramine maleate @ 0.25 mg/kg body weight IM for 3 days as antihistaminic to counteract histamine release in rumen, inj. Mifex (calcium and magnesium borogluconate) 1ml/kg body weight slow IV single dose given for correction of existing subclinical hypocalcemia and to increase the ruminal motility, Pulv. Magnesium sulphate @ 1gm/kg body weight PO single dose and Ecotas bolus @ 2 PO BID for 3 days for hastening ruminal content excretion and regain ruminal motility (Jadhav *et al*., 2022).

On second day, slight improvement in appetite observed but water intake, urination, defecation and rumination were absent while nervous signs were slowly diminishing. On third day, buffalo started taking feed and water normally, rumination started with normal urination and defecation and nervous signs disappeared (Fig. 4 and 5).

In rumen, when there is excess production of ammonia, the microbes cannot utilize it. But ammonia which is not utilized for microbial synthesis is absorbed beyond the gastro-intestinal tract. The excess ammonia reaches the portal circulation and transported to liver and converted to urea. The urea is then excreted via kidney through urine or recycled into the rumen by way of saliva or through blood. As a result of an enormous intake of protein, there will be excessive accumulation of ruminal ammonia, nitrogen and decrease in VFA leading to an alkaline pH of ruminal fluid. When pH exceeds 7.5, there is decrease in the number of ruminal microflora and rumen fluid appears watery and dark brown in colour. It may become slimy and having putrid odour. The paresis of rumen musculature and high ruminal fluid pH bring about inappetance and interfere with cellulose digestion (Chakrabarti, 2014).

Fig. 1. Alkaline Ruminal pH

Fig. 2. Congested mucous

Fig.3. Mucoid hard sticky faeces membranes

Fig. 4. Day 1st of treatment

Fig. 5. Day 3rd of treatment

The principal signs of alkaline indigestion include anorexia, moderate decrease in milk yield, depression, increased pulse and respiratory rate and passage of semi-solid or pasty faeces, atony of rumen along with hepatic, renal, circulatory and

nervous disturbances along with leucocytosis (Mode *et al*., 2006; Radostits *et al.,* 2006). As compared to other forms of indigestion, very less information is available on alkaline indigestion in cattle (Radostits *et al.*, 2006). The parameters like rectal temperature, heart rate, respiration rate, hydration status and ruminal motility was found to be altered in alkaline indigestion which improved after treatment towards normalcy (Kumbhar *et al*., 2018). Alkaline indigestion due to colostrum causes anorexia, decrease in milk yield, nervous signs and impaction of rumen (Jadhav *et al*., 2022) which are in support of present case findings.

Colostrum feeding in adult buffalo can cause alkaline indigestion and can be successfully treated with vinegar and supportive fluid therapy.

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