Nervous form of ketosis in cows and its treatment

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Abstract

Ketosis is defined as an abnormal rise of the ketone or acetone bodies in the body. The ketone bodies are organic chemical compounds and include aceton, acetoacetic acid, and beta hydroxy butyric acid. Present study reports the primary nervous ketosis in three cows at their peak milk yield. Cows exhibited the bellowing, head pressing and reluctance to take concentrates. Low serum glucose, high levels of blood urea nitrogen with ketonuria was observed. Cows showed fruitful recovery after treatment with 25% glucose solution, dexamethasone and glycerin along with supportive therapy.

Keywords: Cows, Dextrose, Ketosis, Nervous Signs.

1. Introduction

Ketosis is a common metabolic disorder in high yielding dairy cows. During peak lactation period, high yielding dairy cows enter a stage of negative energy balance due to energy output required for milk production is higher than the energy obtained from the consumed feed. Due to negative energy balance there is decrease in serum concentration of glucose and insulin that will in turn leads to mobilization of adipose tissue with which consequently increases serum concentrations of non-esterified fatty acids (NEFA) and beta hydroxy butyric acid (BHBA) (Radostits et al. 2000).

Bovine ketosis is expressed in two forms of which most common one is wasting form and another form is nervous form which is a rare expression. Many reports regarding the wasting form of ketosis and subclinical ketosis were recorded (McArt et al. 2012). But, very little information was available on nervous form of ketosis (Wootton 1992). Hence, present communication reports primary nervous ketosis in dairy cows.

2. Materials and methods

During the six months period of observation at Teaching Veterinary Clinical Complex, Ambulatory clinic in College of Veterinary Science, Proddatur, three cows were identified suffering with acute onset of nervous signs like bellowing, crossing of the forelegs while walking, circular movements and anxiety. All the three cows were calved 50 to 70 days back, reluctance towards concentrate feed, presence of dry faeces, dull rough hair coat, sudden drop in milk yield. Among the three one cow occasionally used to push towards walls, severe jaw movements and salivation.

Clinical examination of the cows revealed normal temperature (101.4 to 102.1°F), respiration rate (21 to 28 /min), higher heart rate (82 to 99 /min), ketotic odour on their breath, ruminal hypomotility (2/6min), hyperesthesia and severe excitation.

Genital tract was normal with smooth inactive ovaries and slight doughy rumen on per rectal examination. Whole blood, serum, urine and milk were collected for laboratory examination. Blood sample were collected from jugular vein with sterile disposable syringe and 1 ml of blood was transferred in to vacutainer containing EDTA and 4 ml of blood was transferred into the vacutainer without anticoagulant coated with clot activating factor. Serum was separated for biochemical analysis. EDTA blood was subjected to complete haemogram and for screening against blood protozoans (Reddy et al. 2014a; Sivajothi et al. 2014a). Serum sample was analyzed for glucose, total protein, albumin, calcium and blood urea nitrogen. Urine and milk samples were also screened with rothera’s test. Faecal samples were screened for the parasitic ova by sedimentation technique. Urine samples were tested using uristix examination for other abnormalities.

3. Results and discussion

Haematology did not reveal any significant changes in the present study. Observed haematological parameters under the normal range of local values recorded in the previous studies (Sivajothi et al. 2014b). Faecal samples and whole blood did not reveal any parasitic ova and haemoproteozan diseases respectively.

Serum biochemical analysis had decreased levels of glucose (29mg/dL) and calcium (8.4mg/dL). Normal serum albumin (2.1/dL), total protein (6.3g/dL) and increased blood urea nitrogen (98mg/dL) levels were recorded. Urine was positive rothera’s test and presence of ketone bodies were recorded in uristix examination. Case was diagnosed as primary nervous form of ketosis.

Fruitful recovery was obtained after treatment with intravenous administration of 25% glucose solution for three days (@5ml/kg body weight), intra muscular administration of dexamethasone (0
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