

DIAGNOSIS AND SUCCESSFUL MANAGEMENT OF NERVOUS FORM OF KETOSIS IN TWO COWS

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Abstract: This case study describes the successful recovery of a Rathi cow that was treated promptly for ketosis and given oral carbohydrate precursor therapy for 4 days in addition to initial parental medication.

Keywords: Metabolic disorder, Nervous ketosis, Negative energy balance

Introduction

Ketosis, one of the most significant production diseases in dairy animals. This is caused by defective metabolism of carbohydrates and volatile fatty acids and results in excessive production of acetone, acetoacetate, and beta-hydroxybutyrate. According to Constable et al. (2017), ketosis is a multifactorial energy metabolism condition that causes hypoglycemia (Madhesh et al., 2023). Animals that have an excess of negative energy are prone to enter ketosis. It can manifest as a primary disease or coexist with other clinical disorders (secondary ketosis). About 10% of primary ketosis cases have nervous symptoms (Patel & Patel, 2017). Thus, the purpose of this case report is to inform readers about the successful diagnosis and treatment of a Rathi cow who had nervous ketosis.

Materials and methods

Both cases were presented before me in district Mathura, Uttar Pradesh, India.

Case 1

The owner stated that the Rathi cow was 5 years old and 140 days ago parturated for the second time. The cow showed nervous symptoms like bellowing, walking in circles, straddling, leaning or pushing the head into the stanchion, aimless wandering, vigorous licking of the skin and objects, depraved appetite, and chewing movements with salivation.

Case 2

The owner stated that Gir cow was in her 4th parity and parturated 15 days ago. Cow was feeding on wheat straw and 1 kg of wheat bran and produces 12 litre milk. Cow showed nervous system like bellowing, vigorous licking of body, hitting attendant, leaning and pushing head into stanchion and unusual appetite.

On the basis of history, clinical sign and symptoms, this case was tentatively diagnosed as a nervous form of ketosis.

Results and Discussion

This cattle was treated with an intravenous infusion of 3000 ml of 25% dextrose and 15 ml of neurokind plus, 15 ml of tribivet, 10 ml of methyl prednisolone injected intramuscularly, and 200 ml of syrup enerdyna given once daily for four days. Following the initial therapy, no additional veterinary care was needed. The owner reported a noticeable improvement after 12 hours of initial therapy, and complete recovery was observed after 3 days.

It is believed that the nervous symptoms result from the synthesis of isopropyl alcohol, which is a by-product of acetoacetic acid degradation in the rumen. Because of the high energy requirements of early lactation, there is a risk of prolonged hypoglycemia, which can lead to a decrease in insulin production and lipid mobilization, resulting in hepatic lipidosis. Three very consistent symptoms of ketosis are hypoglycemia, ketonemia, and ketoneuria (Chahar & Chahar, 2018). In cattle, the degree of hypoglycemia is correlated with the severity of clinical ketosis (Zhang and Ametaj, 2020). However, there have been reports of normal or even high blood sugar in some ketosis instances (Boddie, 1935). A malfunctioning carbohydrate metabolism is the cause of the hypoglycemia linked to ketosis and the healing effects of parental glucose (Patel & Patel, 2017). Previous researchers promoted the idea that ketotic cows require accessible carbohydrates. Using sugar and molasses orally to meet this demand (Roepke, 1942; Fincher, 1936). Still, research indicates that as these Initially transformed into fatty acids, some of which are Which are ketogenic, which is contraindicatory. Johnson (1951b), and others (1954 Roberts; 1952 Schultz) recommended using oral carbohydrate precursor (propylene glycol and glycerol) different from sugar in managing and averting ketosis. However, due to similarities in one or more clinical indications, the disease can be differentiated from rabies, listeriosis, and plumbism (lead poisoning).

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