Clinico-therapeutic management of ketosis in cow--a field case

Abstract
This paper deals with a clinical case in a HF cow with signs of ketosis, along with owner history, clinical symptoms and laboratory findings. Milk, urine and blood sample were collected for proper diagnosis of disease. Detection of ketone bodies in urine with Rothera’s test was carried out. Therapeutic regimen was administered as per varied physiological conditions. Such medications as dextrose, steroids, vitamin B complex parenterally (all injected), along with oral gluconeogenic precursors and jaggery were administered. The case was treated successfully, with an excellent recovery.

Keywords: cow, ketosis, rothera’s test, therapeutic management

Introduction
Ketosis (Acetonemia, Ketonemia) is a common disease of dairy cows in early lactation caused by a negative energy balance that results in high concentrations of circulating nonesterified fatty acids (NEFAs), such as acetone, acetoacetate, and hydroxybutyrate (BHB). This disease is usually associated with fatty liver. Ketosis is a multifactorial disease also resulting in downer cow syndrome in adult cattle worldwide. Ketosis causes substantial economic losses and in subclinical form is responsible for decline in milk production. Ketosis develops as a metabolic disorder in dairy animals, caused by impaired metabolism of carbohydrates and volatile fatty acids leading to excessive production of ketone bodies, e.g. acetoacetic acid, beta-hydroxybutyric acid and their decarboxylation products, such as acetone and isopropanol. This clinical paper discusses one case of ketosis found in a cow, diagnosis of the case and treatment which was successful.

Case history
A HF cow of five and half year old, in the 3rd lactation, 250kg body weight, recently calved (10 days ago). According to its owner history, the cow had undergone dystocia and foetus was removed manually causing severe internal trauma to cow. Owner reported that the cow was a high milk yielder. Milk production had reduced by making greater availability of glucose precursor in the liver. Ketosis causes substantial economic losses and in subclinical form is responsible for decline in milk production.

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Diagnosis
Diagnosis was based on presenting owner's history, clinical signs and laboratory tests, such as detection test for ketone bodies in urine and in subclinical form is responsible for decline in milk production.

Treatment and discussion
Treatment was started immediately. The cow was treated with 500ml of 5% dextrose solution, intravenously, for 3 days, to provide an immediate energy source. Vetalog (Triamcinolone), 5ml intramuscular, was injected. Glucocorticoids reduce ketone body formation by utilization of Acetyl-CoA and raising blood glucose level by making greater availability of glucose precursor in the liver. Injection of liver extract with B-complex Tribivet 10ml intramuscular, once a day for 5 days, was given as supportive therapy. Feeding with jaggery, 100 g, was also recommended for five days as an instant energy source. Himalaya Bithsa Powder 50 g orally, twice a day for 5 days, and two Bolus Rumentas, twice a day for 5 days, were also advised to the owner for improving appetite and feed intake by the animal. The cow showed health improvement signs on the second day of treatment, and recovered successfully after three days treatment. Cases of ketosis may occur in high milk yielding, good health conditions.
condition buffaloes and crossbred cows in their 3rd and 4th lactation. Similar findings were reported by Teli	extsuperscript{5} and Tufani.	extsuperscript{6}

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None.

**Conflicts of interest**

The author declares that there are no conflicts of interest.

**References**


