

Case Report



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Successful management of Trypanosomosis in a Holstein Friesian cow

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Abstract

A six year old female Holstein Friesian cow was presented with the history of weakness, anorexia, lacrimal discharges and severe drop in milk production. Clinical examination revealed high body temperature, anaemia, enlarged prescapular lymph nodes and salivation. A very low haemoglobin content (7 gm%) was observed and *Trypanosoma evansi* organisms were identified on blood smear examination. Treatment was instituted with Isometamidium chloride hydrochloride at the rate of 0.5 mg/kg intramuscularly, 5% dextrose one litre intravenously twice daily, and B – complex vitamins at the rate of 5 ml intramuscularly. The animal recovered successfully after therapy for 3 days.

Keywords: Dextrose, Holstein Friesian, Isometamidium chloride hydrochloride, Trypanosomosis.

Introduction

Trypanosomosis is a disease complex caused by several species of protozoan parasites of the genus *Trypanosoma*. *Trypanosoma evansi* is the most widely distributed pathogenic, mechanically transmitted vector borne haemoprotozoan disease of domestic livestock and wild animals in India. In tropical countries like India the disease is also called as Surra. The disease results in loss of livestock and agricultural productivity with serious socio-economic consequences (Swallow, 2000). It causes severe economic losses to the farmers in terms of morbidity, mortality, abortion, infertility and reduced milk yield. The present case report describes the trypanosomosis in a Holstein Friesian (HF) cow.

Case history and observations

A six years old female HF cow was presented to the veterinary dispensary, Kadapa district of Andhra Pradesh with the history of weakness, anorexia, bilateral lacrimal discharges and a severe drop in milk production. Clinical examination revealed body temperature of 105⁰ F, pale conjunctival mucus membranes (anaemic), enlargement of prescapular lymph nodes and salivation.

The haematological examination showed very low haemoglobin (7 gm%) and PCV values (22 %). Blood smears were made from capillary blood collected from peripheral circulation i.e. (ear tip) and then stained with Giemsa stain. Microscopic examination (oil immersion objective) revealed characteristic haemoflagellates, the *Trypanosoma evansi* organisms (Fig. 1).

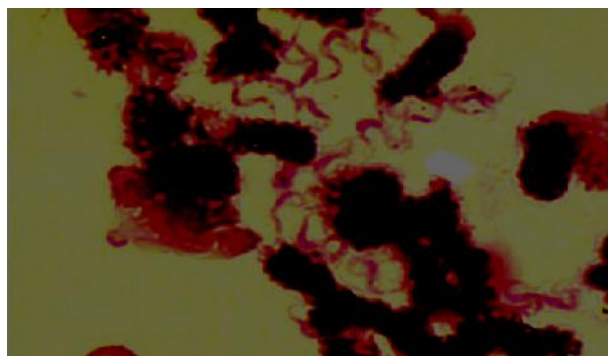


Fig. 1 *Trypanosoma evansi* organisms in the peripheral blood smear

Treatment and discussion

The case was treated with Isometamidium chloride hydrochloride (Surral) at the rate of 0.5 mg/kg intramuscularly. The supportive treatment was given with 5% dextrose one litre IV twice daily, and B – complex vitamins (Tribivet) at the rate of 5 ml intramuscularly. The animal started responding to treatment the very next day itself. However, the animal started feeding normally and temperature was dropped to normal after therapy for 3 days. The peripheral blood sample was found negative for trypanosomes by 4th day indicating the efficacy of treatment. The vitamin supplements were given for 3 more days. It took 10 days for the restoration of milk yield.

Gill (1991) reported that livestock all over India particularly Rajasthan, Haryana, Punjab, Madhya Pradesh, Uttar Pradesh, Maharashtra, Tamil Nadu, Kerala and Andhra Pradesh is prone to disease. The symptoms observed in the present case were in agreement with the findings of Pathak and Singh (2005) who also observed symptoms like high fever, lacrimation and sudden drop in milk yield. The present case was reported during the rainy season (August) in which the population of flies and mosquitoes are comparatively higher and most conducive for propagation of the disease. Ruprah (1985) also stated that most suitable season for occurrence of disease is during rainy season due to availability of rain water lodged ditches for breeding of the flies. Anaemia is the principal pathological change seen, which is attributable to the extravascular destruction of RBC's and also due to liberation of toxins by trypanosomes (Pathak and Singh, 2005). Anemia also manifests by drop in PCV as also observed in the present case and a significant decline in PCV is a primary criterion for assessing the degree of severity of trypanosomosis (Murray and Dexter 1988).

A presumptive diagnosis was made, based on finding an anemic animal in poor condition. However, confirmation was made by demonstrating trypanosomes in stained blood smears. Other infections that cause anemia and weight loss, such as Babesiosis, Anaplasmosis, and Theileriosis, were ruled out by examining a stained blood smear. In the present case, therapy was initiated with Isometamidium chloride hydrochloride which selectively inhibits the kinetoplasmic topoisomerase type II in the trypanosomes leading to its death.

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