



## RESEARCH ARTICLE

### DIAGNOSIS AND TREATMENT MANAGEMENT OF BOVINE TRYPANOSOMOSIS IN CROSSBRED JERSEY COW

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#### ABSTRACT

The article present clinical sings, diagnosis and successful treatment of trypanosomosis in crossbred jersey cow presented to veterinary dispensary in Rasipuram, Tamilnadu. Clinical examination revealed high fever (105°F), pale mucous membrane, diarrhoea, with the history of anorexia, dullness, excess salivation, dyspnoea, ocular discharges. Blood smear examination revealed presence of *Trypanosome evansi* in the peripheral blood. The cow was treated with single dose of inj. Diminazenediaceturate (Berenil) @ dose rate of 3.5 mg/kg B.W and Oxytetracycline @ dose rate of 22 mg/kg B.W along with supportive therapy for three days. The cow responded well and recovered uneventfully.

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## INTRODUCTION

Indian cattle population of 185.18 million account for 14.13 per cent of world bovine population (Quinquennial Livestock Census, 2003) which contribute to the production of milk, making the country largest producer of milk in the whole world. But the average milk production per animal is below the world average with main reasons being improper culling, poor nutrition and diseases (Birthal and Jha, 2005). Though various diseases responsible for poor production, parasitic diseases are causing more significant effects on growth and production. Trypanosomal infections caused by pathogenic trypanosomes, trypanosomosis ('Surra') caused by vector-borne haemoprotozoa, *Trypanosoma evansi* has the widest range of hosts and geographical distribution. The impact of clinical and sub-clinical form of this mechanically transmitted disease by biting flies such as tabanids (Claes et al., 2004) is difficult to control (Desquesnes et al., 2013). Dairy animals especially bovines, which are attitude great production stress along with other unknown and uninvited diseases, are potentially viable host to the infection. Treatment of trypanosomosis in the field conditions is done on the basis of clinical signs and

demonstration of parasites in the blood, sometimes accompanied by haemato-biochemical tests. But the diagnosis of subclinical infection is more difficult since, the disease is characterized by fluctuating parasitaemia with periods of paroxysms and intermission. Giemsa stained blood smear examination (BSE) has a low sensitivity. Thus, in cases of subclinical infection and cryptic nature of the parasitaemia, it is often difficult to demonstrate parasites in the blood. The most useful and reliable test is the enzyme immunoassay (Indirect ELISA) in view of their sensitivity and specificity, which is used for the diagnosis of *Trypanosoma evansi* infections (Sivajothi et al., 2014a). Hence the present investigation was designed to diagnosis of Trypanosomal infection by Giemsa stained smears methods and successfully managed in the filed condition.

#### Case History and Observation

A 6 years old female cross bred jersey cattle was presented to the veterinary dispensary, Rasipuram, Tamilnadu with clinical history of inappetence, pyrexia, pale mucous membrane, diarrhoea, chaxexia, with the history of anorexia, dullness, excess salivation, difficulty in respiration (dyspnoea), ocular discharges. The clinical observation includes pyrexia (105°F), chronic emaciation and corneal opacity. Blood was obtained from the peripheral ear vein and jugular vein from affected

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animal and drop of blood was placed on a clean glass slide for smear preparation as suggested by Benjamin, (1986). The blood smears were prepared and dried by waving in the air and the blood smears were fixed in absolute methyl alcohol for 3 min and stained with Giemsa's staining as described by Benjamin (1986). The slide was examined under the oil immersion lens (100×) of the microscope for the presence of Trypanosomaevansi. Approximately 50–100 fields of the stained thin smear were examined and approximately more than 20 trypanosome has been detected in each field. The sharp extremities of the smears were extensively explored, because of their capillary properties; trypanosomes may be concentrated at this place (Oie 2004; Sivajothi *et al.*, 2013b).



**Plate:** Giemsa stained blood film showed *Trypanosomaevansi* with destruction of red blood cells (40X)

## TREATMENT AND DISCUSSION

The cow was treated with single short of inj. Diminazenedia ceturate (Berenil) @ dose rate of 3.5 mg/kg body weight deep intra muscular as reported previously by Whitelaw *et al.* (1989) and Katunguka – Rwakishaya *et al.* (1997). Along with oxyteracycline @ dose rate of 22mg/Kg body i/v route given 3days continuously. In addition to that animal treated with inj. meloxicam with paracetamol (Melanex Plus) @ dose rate of 0.3 mg/kg body weight to overcome of pyrexia and also treated with inj. B-complex vitamin (Tribevet) and feritas injection given intra muscular to overcome anaemia and for the successful treatment. Animals with poor body condition were more associated with the disease as Trypanosomosis causes weight loss (cachexia), and emaciation is a characteristic sign of trypanosomosis similar to that of present study reported by Urquhart *et al.* (1996) and FAO (2002). Depending on the trypanosome size and movements a presumptive diagnosis can be made of the trypanosome species. The diagnostic sensitivity of the method is generally low but depends on the examiner's experience and the level of parasitaemia. Giemsa stained blood smear examination is simple and relatively inexpensive, but results are delayed because of the staining process and also it's very useful for field condition. Trypanosomes are easily recognized by their general morphology, but may be damaged

during the staining process. This may make it difficult to identify the species. In the present case examination of the Giemsa stained smear had Trypanosomaevansi; it was monomorphic in character, slender in shape, having an undulating membrane with a well-developed free flagellum present outside the cell as reported previously by Soulsby (1982).

## Plate

Giemsa stained blood film showed Trypanosomaevansi with destruction of red blood cells (40X)

## Summary

Successful treatment of bovine trypanosomosis in crossbred jersey cow has been reported.

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