



ISSN (E): 2277-7695  
ISSN (P): 2349-8242  
NAAS Rating: 5.23  
TPI 2022; SP-11(11): 641-642  
© 2022 TPI

[www.thepharmajournal.com](http://www.thepharmajournal.com)

Received: 01-08-2022

Accepted: 05-09-2022

**S Sunandhadevi**  
Department of Veterinary  
Medicine, Veterinary College and  
Research Institute, TANUVAS,  
Chennai, Tamil Nadu, India

**K Gopal**  
Department of Veterinary  
Medicine, Veterinary College and  
Research Institute, TANUVAS,  
Chennai, Tamil Nadu, India

**M Ranjith Kumar**  
Department of Veterinary  
Medicine, Veterinary College and  
Research Institute, TANUVAS,  
Chennai, Tamil Nadu, India

**K Mahendran**  
Department of Veterinary  
Medicine, Veterinary College and  
Research Institute, TANUVAS,  
Chennai, Tamil Nadu, India

**RC Sundararajan**  
Department of Veterinary  
Medicine, Veterinary College and  
Research Institute, TANUVAS,  
Chennai, Tamil Nadu, India

**E Madhesh**  
Department of Veterinary  
Medicine, Veterinary College and  
Research Institute, TANUVAS,  
Chennai, Tamil Nadu, India

**M Kalaivanan**  
Department of Veterinary  
Medicine, Veterinary College and  
Research Institute, TANUVAS,  
Chennai, Tamil Nadu, India

**V Vijayanand**  
Department of Veterinary  
Medicine, Veterinary College and  
Research Institute, TANUVAS,  
Chennai, Tamil Nadu, India

**M Balangatharathilagar**  
Department of Veterinary  
Medicine, Veterinary College and  
Research Institute, TANUVAS,  
Chennai, Tamil Nadu, India

**Corresponding Author:**  
**S Sunandhadevi**  
Department of Veterinary  
Medicine, Veterinary College and  
Research Institute, TANUVAS,  
Chennai, Tamil Nadu, India

## Therapeutic management of trypanosomiasis in a she buffalo

**S Sunandhadevi, K Gopal, M Ranjith Kumar, K Mahendran, RC Sundararajan, E Madhesh, M Kalaivanan, V Vijayanand and M Balangatharathilagar**

### Abstract

A five years old graded Murrah she-buffalo was presented with the history of anorexia, depression and reduced milk yield since one week. Clinical examination revealed enlargement of lymph nodes, severely congested conjunctival mucous membrane and vaginal mucous membrane. Temperature, Heart rate, pulse rate and respiratory rate were within the normal range. Whole blood, blood smear and serum sample were evaluated. Peripheral blood smear examination confirmed *Trypanosoma evansi*. The animal was treated with three dose of Diaminazene aceturate injection along with supportive treatment. Clinical signs completely subsided after two weeks of therapy. The animal had uneventful recovery.

**Keywords:** Diaminazene aceturate, anaemia, *Trypanosoma evansi*, trypanosomiasis

### Introduction

Trypanosomiasis (Surra) caused by the haemo-flagellate protozoan *Trypanosoma evansi*, is a major constraint on the health and productivity of domestic animals throughout the tropics and subtropics (Gill 1991; Da Silva *et al.* 2010) [4, 3]. In India, *T. evansi* is the commonest and the most prevalent trypanosome of livestock, although isolated cases of *Trypanosoma theileri* have also been encountered (Sood *et al.* 2011) [7]. The clinical signs of trypanosomiasis is mostly characterized by intermittent fever with high peaks during parasitaemia stage, anemia, weight loss, nervous signs, transient cutaneous eruption and edema of dependent part especially hind limbs. The disease in cattle and buffaloes usually occurs in chronic form as an asymptomatic infection (Bharadwaj and Randhawa 2010). The present study deals with therapeutic management of Trypanosomiasis caused by *T. evansi* in a graded Murrah buffalo.

### History and Clinical Observations

A five years old female graded Murrah buffalo (Fig.1) was presented with the history of anorexia, depression, reduced milk yield since one week. Clinical examination revealed enlargement of lymph nodes, severely congested conjunctival mucous membrane and vaginal mucous membrane. Temperature, Heart rate, pulse rate and respiratory rate were well within the normal range. Whole blood, serum and blood smear were collected for hematological, serological and hemoprotozoan examination respectively. Hematological parameters and biochemical parameters were assessed by automatic analyzer which depicted in Table.1. The peripheral blood smear was stained with Leishman stain and examined under light microscope (40x) and followed by using the oil immersion objective (100x). Microscopic examination showed presence of *Trypanosoma* organism outside the RBCs. Based on clinical findings and blood smear examination, the case was diagnosed as *Trypanosoma evansi* infection (Fig.2).

### Treatment and Discussion

The animal was treated with three dose of Inj. Oxytetracycline @ 20mg/kg B.Wt. IM, Inj. Diaminazene aceturate @ 3.5 mg/kg deep intramuscularly at alternative days. Supportive treatment included Inj. Flunixin meglumine @ 1.1 mg/kg IM, Inj. Chlorpheniramine maleate @ 0.5 mg/kg for five days, Inj. Tribivet (Vitamin B1, B6 and B12) @ 15 ml/day IM for five days. After two weeks of treatment, animal recovered clinically with complete disappearance of organisms in peripheral blood smear. Trypanosomiasis by *T. evansi* in cattle and buffaloes usually occurs in chronic form as an asymptomatic infection (Bharadwaj and Randhawa 2010) [2].

In endemic areas, cattle and buffalo usually have a milder disease that may be exacerbated by stress from adverse climatic conditions, work, or intercurrent disease. Mekata H *et al.* 2013 [6] reported the clinical signs of chronic form of trypanosomiasis which included a reduction in milk yield and capacity for work, irregular estrus, a high rate of abortion and stillbirth, and poor semen quality in bulls. Anaemia noticed in the present case might be due to the fact of several mechanisms including increased red cell destruction, extravascular and intravascular hemolysis by immune system, direct traumatic effect of trypanosomes, disseminated intravascular coagulation and splenic phagocytosis which was reported by (Jenkins and Facer 1985 [5]). In this case, the animal was treated using Inj. Diamnizine acetate as a primary drug of choice as per Anosa and Kaneko, 1983 who suggested the therapeutic considerations for trypanosomiasis consists of treatment with Diminazene diacetate, Quinapyramine sulfate, Isometamidium chloride and suramin. To concur that reduction in milk yield and reduction in

performance is the only key determinant of chronic form of trypanosomiasis in buffalos occurred as proposed by Mekata (2013) [6].



Fig 1: Graded murrha

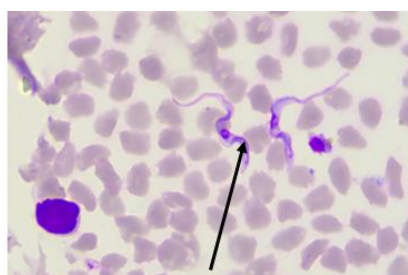


Fig 2: Trypanosoma evansi (100X)

Table 1: Hemato-biochemical Parameters

Parameter	Result	Range
Hemoglobin	9.0 g/dl	8.5-12.2
PCV	27%	24-46%
WBC	4700 /cmm	4900-12,000
Platelets	143000	2,00,000-6,50,00
Neutrophil	34%	30-40
Lymphocyte	66%	50-60
BUN	93.99 mg/dl	20-30
Creatinine	1.6 mg/dl	1-2
AST	77 IU/dl	78-132
ALP	59 IU/dl	0-488
Calcium	9.4 mmol/dl	9.7-12.4
Phosphorous	3.8 mmol/dl	5.6-6.5
Glucose	90 mg/dl	45-75
Triglycerides	91 mg/dl	0-14
Sodium	179.06 mmol/dl	132-152
Potassium	1.59 mmol/dl	3.9-5.8
Chloride	123.14 mmol/dl	97-111

## References

1. Anosa VO, Kaneko JJ. Pathogenesis of *Trypanosoma brucei* infection in deer mice (*Peromyscus maniculatus*): hematologic, erythrocyte biochemical and iron metabolic aspects. American Journal of Veterinary Research. 1983;44:639-44.
2. Bharadwaj RK, Randhawa CS. Chronic trypanosomiasis in crossbred cattle. Indian Veterinary Journal. 2010;87:408.
3. Da Silva, AS, Wolkmer P, Costa MM, Tonin AIA, Eilers TL, Gressle LT, *et al.* Biochemical changes in cats infected with *Trypanosoma evansi*. Veterinary Parasitology. 2010;17:48-52.
4. Gill BS. Trypanosomes and Trypanosomiasis of Indian Livestock, 192 New Delhi: ICAR Publication; c1991.
5. Jenkins GC, Facer CA. Hematology of African Trypanosomiasis. In: TIZARD, I. Immunology and Pathogenesis of Trypanosomiasis. Boca Raton, Florida: C.R.C. Press; c1985. p. 13-44.
6. Mekata H, Konnai S, Mingala CN, Abes NS, Gutierrez CA, Dargantes, AP, *et al.* Isolation, cloning and pathologic analysis of *Trypanosoma evansi* field isolates. Parasitol Res. 2013 Apr;112(4):1513-21.
7. Sood NK, Singla LD, Singh RS, Uppal SK. Association of *Trypanosoma theileri* with peritonitis in a pregnant cross-bred cow: A case report. Veterinarni Medicina. 2011;56:82-84.