

# Corneal Opacity Due to Trypanosomosis in Buffaloes- Need of Topical Medication

## Abstract

During the four years duration of study on animal trypanosomosis, corneal opacity was a frequent complaint in buffaloes with *Trypanosoma evansi* infection. Other signs recorded during infection were anorexia, irregular pyrexia, drastic change in milk yield and bilateral ocular discharges. Treatment of *Trypanosoma evansi* itself is sufficient for the management of corneal opacity developed in acute stages of diseases. But, corneal opacity during the chronicity of the infection requires topical ocular medication. During the course of chronic infection, vision of the eye might be impaired due to the cloudiness of cornea by accumulation of the granular deposits within the aqueous humour.

**Keywords:** Aqueous humor; Buffaloes; Corneal opacity; *Trypanosoma evansi*

## Research Article

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## Introduction

Bovine trypanosomosis (surra) is one of the most common haemoprotozoan disorders in the Rayalaseema region of Andhra Pradesh especially in buffaloes. It is one of the widely prevalent economically important diseases in animals and caused by unicellular flagellated haemoprotozoan *Trypanosoma evansi* organisms [1]. It spread by mechanical transmission and tabanid flies act as vectors. The disease is generally sub clinical, acute and chronic in buffaloes. In advanced disease process, parasites invade the central nervous system which leads to development of the nervous signs. Due to development of the immunodeficiency, frequent corneal opacity reported in buffaloes [2]. Many published literature on various aspects of clinical cases were reported in dogs, cats, cattle and buffaloes in India. But reports on importance of the management of the corneal opacity due to trypanosomosis not mentioned in any literature [3-11]. As a professional with nine years working experience on the animal trypanosomosis, present paper is about to report corneal opacity and need of topical ophthalmic medication in buffaloes with natural clinical trypanosomosis.

## Materials and Methods

Present study was carried out at the Veterinary Clinical Complex, College of Veterinary Science, Proddatur and other dispensaries nearer to the Proddatur, YSR Kadapa District and Andhra Pradesh, India. During the four year period of clinical examination of the buffaloes with clinical trypanosomosis; anorexia, irregular pyrexia, ocular discharges and reduction in the milk yield were the salient features (Figure 1). Trypanosomosis was confirmed by wet blood films and Leishman stained smears examination [5]. Clinical trypanosomosis was treated by different selective drugs include injection diminazene aceturate or quinapyramine sulphate and chloride or suramin or isometamedim with standard reference dosages along with supportive therapy [6]. During the chronicity of the opacity buffaloes were advised to treat with topical instillation of ciprofloxacin eye drops and prednisolone acetate eye drops along with the above therapy.

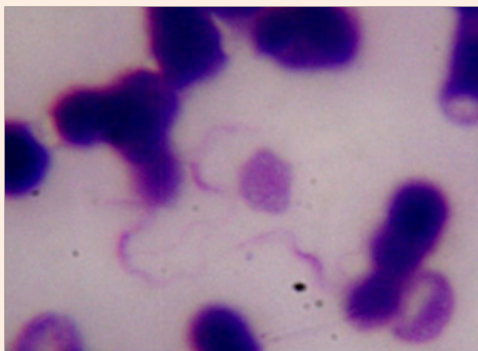


**Figure 1:** *Trypanosoma evansi* infected buffaloes showing the corneal opacity.

## Results and Opinion

*Trypanosoma evansi* organisms were recognized by their movement in between the red blood cells in wet blood film examination and morphological confirmation was done by examination of Leishman stained blood smears (Figure 2) [5]. Buffaloes with acute infection, corneal opacity was resolved by the treatment with anti trypanosomal drugs alone. In these cases, corneal opacity was regressed within eight to twenty days after the therapy. Corneal opacity due to chronic infection required sixteen to forty two days to attain the normal eye. During the period of treatment, corneal opacity subsided gradually and the cornea regained transparency and vision. Development of the corneal opacity was either bilateral or sometimes unilateral initially and later it will be as bilateral or starting itself as. Previously, improvement in the corneal opacity was reported by the various authors in different animals with variations in the recovery period [3-7]. Eye is considered as extremely delicate organ with ample number of sensory nerve supply. During the disease process, organisms descent from the brain along with the

optic artery and leads to formation of immune complexes into the aqueous humour [7,8]. During the course of the disease, changes in the serum biochemical alterations, anemia and changes in the thyroxin levels leads to severe immune depression which further responsible for invasion of secondary bacterial infections in relation to the effected organ [9]. Source of literature supports the management of corneal opacity due to acute infection [10]. But, during the chronicity of the disease, once localized inflammation in association with the bacterial infection is settled, it needs local topical antimicrobial and anti-inflammatory medications [12].



**Figure 2:** *Trypanosoma evansi* organism in stained blood smears (1000X).

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### Conflict of Interest

The authors declare that they have no conflict of interest.

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