

## CLINICAL MANAGEMENT OF DOURINE IN KATHIAWARI STALLION

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**Abstract:** A five and half year old Kathiawari male horse was presented to the large animal medicine ward with the history of anorexia, emaciation and respiratory distress. Clinical examination revealed icteric conjunctival mucus membrane, pyrexia, dollar shaped spots at neck region and crackling sounds on auscultation of lungs. Examination of wet blood film and stained smears revealed the presence of long slender free flagellated trypanosomes. Haemato-biochemical analysis revealed decrease in PCV, haemoglobin, TEC, total protein as well as albumin while increase in the values of neutrophils, globulin, total bilirubin, creatinine and BUN were recorded. The horse was administered with quinapyramine sulfate & quinapyramine chloride @ 5 mg/kg body weight subcutaneously in divided doses along with supportive therapy. Uneventful recovery was observed after one week post therapy.

**Keywords:** Blood smear; Dollar spots; Dourine.

### Introduction

Equine trypanosomosis (Dourine) is an acute or chronic contagious protozoan disease of equids caused by *Trypanosoma equiperdum*. Equines are considered to be the only natural host for *T. equiperdum* affecting horses, mules and donkeys. Dourine is the only trypanosomosis transmitted sexually from infected to healthy animals although there are few report stating that it can also transmitted to foals during birth and through maternal milk [1]. *T. equiperdum* differs from other trypanosomes as it rarely invades the blood and is primarily a tissue parasite. In typical cases metastatic of the parasite leads to characteristic cutaneous plaques. The course of the disease is chronic varying from few months to 1-2 years and is divided into three stages: stage one (genital lesions), stage two (cutaneous signs) and stage three (nervous signs). Confirmatory diagnosis of dourine can be done by parasitological examination, advanced diagnostic techniques like animal inoculation, serological tests (ELISA, Card Agglutination test trypanosomosis) and molecular techniques (polymerase chain reaction). Therapy is not recommended because the treated animals may remain as apparent carriers and could continue to spread the disease [5]. There are no officially approved drugs to treat horses suffering from

dourine although some earlier publications mentioned experimental treatment of horses with diminazene or quinapyramine sulfate [3].

### **Case History and Clinical Observations**

A five and half year old Kathiawari male horse was presented to the large animal medicine ward, NTR CVSc, Gannavaram, AP, India with the history of anorexia, respiratory distress and in coordination of the hind limbs since three days. Clinical examination revealed pyrexia, emaciation, icteric conjunctival mucus membranes (Fig. 1), scrotal edema (Fig. 3), swelling of prepuce, dollar shaped lesions on the neck region (Fig. 2) and crackling sounds were heard on auscultation of lungs. Horse was previously treated locally with ceftriaxone and tazobactam but no clinical improvement was noticed.

### **Diagnosis and treatment**

Microscopic examination of wet blood film revealed the presence of fast moving organisms (Fig. 5) and examination of stained smears collected from blood and edematous fluid revealed the presence of long slender flagellated trypanosomes (Fig. 6). Lateral thoracic radiography revealed fluid filled bronchi with prominent vascular pattern (Fig. 4). Hemato biochemical findings showed a decrease in Hb, PCV, RBC, total protein, albumin and an increase in the levels of neutrophils, globulin, total bilirubin, BUN and creatinine (Table 1). Based on the clinical signs, breeding history and presence of trypanosome organisms in blood and edematous genital fluid the case was confirmed as stallion suffering from dourine. Treated with Quinapyramine sulfate & Quinapyramine chloride (TRIQUIN) @ 5 mg/kg body weight subcutaneously in divided doses [7] and supportive therapy with hepato protectant @ 50 ml per day (Livoferol), hematinic @ 20 ml per day (Sharkoferol Vet) and antioxidant & immunomodulator @ 20 ml per day (E Care Se) orally. Secondary bacterial infection was treated with ceftiofur sodium (Xyrofur) @ 1.1 mg/kg b.wt IM and flunixin meglumine (megludyne) @ 1.1 mg/kg b.wt IM once in a day for a week. Gradual subsidence of clinical signs and improvement in the hemato-biochemical parameters were observed on 7<sup>th</sup> and 14<sup>th</sup> day post treatment (Table 1). However because of the carrier nature of the disease chances of recurrence and prognosis was explained to the owner as suggested by OIE (2013) [5]. Equines are the only natural host for *T. equiperdum* transmitted by coitus and trypanosomes are usually present in the tissues and cause local symptoms of genital organ. Breeding history along with specific clinical signs such as scrotal edema, swelling of prepuce, dollar spots on the body, ataxia and anemia were confirmative of dourine [6]. Similarly, in the present case genital as well as cutaneous form of trypanosomosis was recorded in stallion maintained for working

purpose. Anaemia noticed in the present case might be due to hemolysis, hemodilution and non compensatory erythropoiesis as opined by Marques *et al.* (2000) [4]. Increased icterus index recorded in the present study could be due to hemolysis, a gradual decline in the level of serum total protein and albumin in the affected stallion during the course of infection may be due to hepatic damage whereas increase in the globulin level might be attributed to enhanced antibody production as opined by [2].

**Table 1: Pre and post-treatment hemato biochemical findings of Dourine in stallion**

	Day	TEC ( $\times 10^6$ / $\mu$ l)	TLC ( $\times 10^3$ / $\mu$ l)	Hb (g/dl)	PCV (%)	DLC (%)	TP (g/dl)	Albumin (g/dl)	Bilirubin (mg/dl)	BUN (mg/dl)	Creatin ine (mg/dl)
BT	0 <sup>th</sup>	2.8	9.6	5.2	15	55-N 45-L	5.1	1.9	4.2	35	1.8
AT	7 <sup>th</sup>	3	10.2	6.2	17	82-N 18-L	5.6	2.5	4	28	1.4
	14 <sup>th</sup>	3.2	5.4	5.6	16	60-N 38-L 2-E	5.9	2.9	3.8	25	1.1

BT-Before tretment; AT-After treatment



Fig. 1: icteric conjunctival mucus membrane



Fig.2: cutaneous wheals on neck region

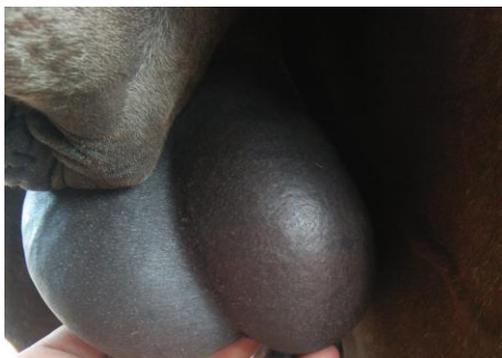


Fig. 3: Scrotal edema and swelling of prepuce

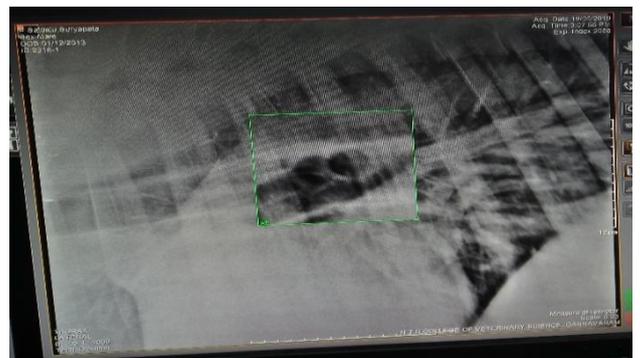


Fig. 4: Fluid filled bronchi with prominent vascular pattern

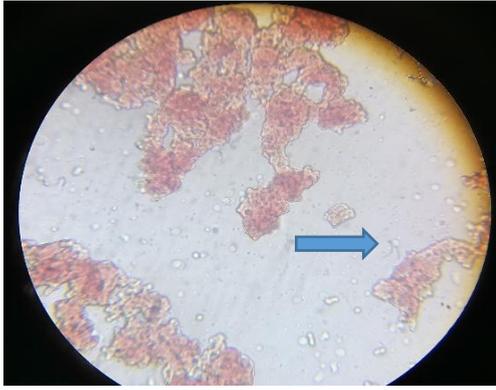


Fig.5: Fast moving flagellated organism in Thin wet blood film (100X) trypanosome

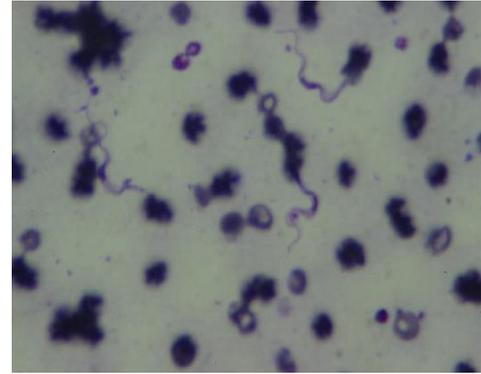


Fig. 6: long slender, flagellated organism suggestive of trypanosome *Spe.* (1000X)

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