

TRYPANOSOMIASIS IN A DRAUGHT DONKEY

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INTRODUCTION

Trypanosoma evansi infection also called Surra is a common haemoprotozoan disease of equines in Pakistan (Anwar and Muhammad, 1986, Waheed *et al.*, 1998). As many as 7.77, 15.29, and 15%, respectively of 180 donkeys, 425 horses, and 40 mules were found afflicted with this disease in recent cross-sectional study conducted at Gujranwala District of Pakistan, Punjab (Waheed *et al.*, 1998). Clinical symptoms (intermittent fever, anaemia and incoordination on walking) and epidemiological features (e.g, association of disease with summer and rainy season) are sufficiently characteristic to enable the veterinarians to diagnose the disease without resorting to laboratory tests. The present report highlights the consequences of overlooking these features and documents the successful treatment of surra using an inexpensive drug viz, diminazine in a draught donkey.

Case History, Clinical Examination, Diagnosis and Treatment.

On 28.8.98, a two year old male draught donkey weighing about 200 kg was presented at the outdoor clinic of Department of Clinical Medicine and Surgery, University of Agriculture Faisalabad for the treatment of fever and incoordination of gait. Because of inability to walk on its feet for a long distance, it was hauled on a donkey cart. As learnt from the owner, the symptoms were noticed first on 25-8-98, when the donkey fell suddenly while working. The animal was shifted to home and further work was stopped on that day. The history of the distant past indicated that the donkey has had 3 bouts of fever during the last two months. It had gradually lost condition over this period.

By inserting hand into animal's mouth, the owner concluded that the animal was feverish and a physis ball consisting of onions, green pepper, licorice, linseed and jaggery was administered. Erroneously concluding that the animal's ailment was of trivial nature, the owner put the animal to work again on next day when it fell again during work.

At the time of clinical examination on 28.8.98, fever (103 °F), rapid pulse (105/min) and respiration

(28/min) rate, severe depression, and incoordination of gait were observed. A clinical diagnosis of simple fever was made and the following treatment instituted:

- 1) Inj. Dipyron 15 mL IM.
- 2) Inj. Vitamin B-Complex 10 mL IM.
- 3) Inj. Stopen (strepto-penicillin) 2.5 gm IM

Next day (29-8-98), there was no improvement and animal's temperature was still 103 °F. The treatment as given on the previous day was repeated on 29.8.98 through 2.9.98 with the addition of dextrose 5% with normal saline (1000 mL IV). Over this period the condition of the animal further deteriorated with rectal temperature varying from 103 to 106 °F on different days and depression progressing to somnolence. Different attending veterinarians on these different days diagnosed the disease as either simple fever, or anhidrosis. The refractory nature of the fever prompted the authors to examine the blood for haemoparasites on 3.8.98. Microscopic examination of wet blood films and Giemsa stained blood smears revealed an astronomical number of trypanosomes. Latex agglutination test performed on plasma using a commercial diagnostic kit Suratex™, (Accu Pharma, N.Y. USA) was also positive. As such a diagnosis of *Trypanosoma evansi* infection or Surra was reached. Livet trypanosomes were recoverable, when the blood stored in a refrigerator (4 °C) was subjected to wet blood film examination on next day. Their numbers, however, had reduced considerably.

In the light of a changed and confirmatory diagnosis of trypanosomiasis, the treatment from 3.8.98 onward was directed against the trypanosomes. To this end, 20 mL of diminazine (Star Labs. Lahore, Pakistan) was injected intramuscularly. The next day (4.9.98), although the animal was aparasitaemic, it still had fever (105.4 °F), anorexia, and incoordination of gait. The administration of diminazine was repeated with reduce dose (15 mL IM.). On 5.9.98, the blood was again negative for trypanosomes. The rectal temperature was normal (100 °F), the appetite of the animal returned and incoordination had almost disappeared. The blood test conducted on day 7 post initiation of trypanosomicidal therapy was also negative with further improvement in general condition of the animal and a complete restoration of the normalcy of the gait and appetite.

Haematological examination conducted before instituting trypanosomicidal treatment (day 0) revealed leucocytosis alongwith neutrophilia and lymphopenia, decreased PCV, Hb and an accelerated ESR. Instituting trypanosomicidal treatment with diaminazine affected a decrease in leucocytic counts, deceleration of ESR along with a tendency of lymphocyte counts, PCV, and Hb returning towards normal values (Table 1).

DISCUSSION

The characteristic clinical sign viz. the intermittent fever as observed in the subject of this case report is reflective of spikes of parasitaemia (Schonefeld, 1979). Anaemia and emaciation can be attributed to immune destruction of erythrocytes in the endothelial system (Vanselow, 1978). The characteristic clinical manifestations, the refractory nature of fever (with saw-tooth pattern) to antibiotics and antipyretics together with occurrence of the case during the hot and humid month of August were all strongly suggestive of trypanosomiasis in the present case. Unfortunately, however, the different physicians attending the case overlooked these important considerations until finally the blood test was done and the case diagnosed as surra.

The treatment given from 25.8.98 upto 3.9.98 was not directed towards trypanosomiasis. Hence no response was observed. Rather a delay in establishing etiological diagnosis (Surra) led to a deterioration of the condition of the donkey.

A variety of drugs such as suramin sodium, diminazine, homidium bromide, homidium chloride, quanapyramine, isometamidium chloride (Muhammad *et al.*, 1996) can be used to treat trypanosomiasis. We selected diminazine for reason of its low cost and lack of toxicity in equines and also its efficacy against babesias which might co-exist with surra (Waheed *et al.*, 1998).

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Table 1. Haematological profiles of a *Trypanosomiasis* affected donkey before and after treatment with diminazine.

Parameters	Pre-treatment	Post-treatment			Normal values for donkey (Svendsen, 1997)
	0	1	4	7	
RBC ($10^6/\mu\text{L}$)	4.45	5.10	5.20	5.45	4.6-8.5
Hb (g/dL)	7.4	8.2	9.4	9.8	11.6
PCV (%)	13.0	16.0	20.0	23.0	33.0
ESR (mm/1st.hr)	172.0	170.0	161.0	148.0	-
MCHC (g/dL)	56.92	51.25	47.0	42.61	(31-37)
MCV (fL)	29.21	31.37	38.46	42.20	(34-58)
TLC (10^3)	6.3	6.0	6.0	5.8	6-12
DLC (%)					
Neutrophils	66.0	35.0	30.0	31.0	45.0
Eosinophils	4.0	2.0	1.0	2.0	4.0
Lymphocytes	28.0	58.0	66.0	64.0	50.0
Monocytes	2.0	5.0	3.0	3.0	1.0

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