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Himanshu Kumar

M.V.Sc, Veterinary Gynaecology & Obstetrics. College of Veterinary and Animal Sciences, GBPUA&T, Pantnagar, Uttarakhand, India

Vishaka Sharma

M.V.Sc, Veterinary Gynaecology & Obstetrics. College of Veterinary and Animal Sciences, GBPUA&T, Pantnagar, Uttarakhand, India

Satish Kumar

Assistant Professor, Veterinary Clinics, College of Veterinary and Animal Sciences, GBPUA&T, Pantnagar, Uttarakhand, India

Alok Mishra

Teaching Personal, Veterinary Clinics, College of Veterinary and Animal Sciences, GBPUA&T, Pantnagar, Uttarakhand, India

Corresponding Author:

Satish Kumar

Assistant Professor, Veterinary Clinics, College of Veterinary and Animal Sciences, GBPUA&T, Pantnagar, Uttarakhand, India

Diagnostic and therapeutic management of canine trypanosomiasis: A case report

Himanshu Kumar, Vishaka Sharma, Satish Kumar and Alok Mishra

Abstract

A 7year old nondescript male dog presented to VCC, College of Veterinary & Animal Sciences, Pantnagar with the chief complaint of generalized illness, intermittent fever, inappetance, lethargy, weight loss, disinterested to surroundings and recumbent since five days. Clinical findings indicated dull appearance, pale mucous membrane, tachycardia, Temperature (105⁰F) and slight unilateral corneal opacity with generalized debility. The dog was tested for the presence of haemoprotozoan through blood smears and microscopically revealed presence of *Trypanosoma* organism outside the RBCs in Giemsa stain. Dog was successfully treated with diminazine aceturate @ 2.5 mg per kg body weight single dose with half of the total dose repeat after 12 hour along with antibiotic and other supplementation may help to overcome the hurdle of parasitaemia and successful recovery in clinical cases.

Keywords: Trypanosoma, Diminazine, Dog

Introduction

Trypanosomiasis is a hemoprotozoan disease of domestic and wild animals like horses, mule, donkey, camel, cattle, buffaloes, sheep, goat, dogs, pig, elephant, deer, foxes, tiger and jackals, spread by biting of infected tsetse flies, a biological factor [2]. The disease is generally acute and fatal in canines [7] and chief clinical symptoms are intermittent fever, anemia, edema of dependent parts, myocarditis and the corneal opacity are characteristic findings of chronic Trypanosomosis [8]. The nervous symptoms, abortion are responsible for major production losses [1]. Surra in dogs is characterized by high mortality, morbidity and anemia, which have been recorded as a consistent finding in infected dogs [4]. It is usually found in South and Central America, Mexico, and Southern United States. The response from the immune system is vigorous and produces inflammation, weight loss lethargy and fever.

All species of *Trypanosoma*, with the exception of some strains of *T. vivax*, which produce a hyper acute and acute infection, characterized by high parasitaemia, fever, severe anemia and hemorrhages on the mucosal and serosal surfaces [9]. There are a number of effective trypanosomacidal agents for dogs including suramin, quinapyramine and diminazine but single dose of diminazine aceturate is effective in eliminating the natural Trypanosomosis infection in canine [6].

History and observational study

A 7year old nondescript male dog presented to VCC, College of Veterinary & Animal Sciences., Pantnagar with the chief complaint of generalized illness, intermittent fever, inappetance, lethargy, weight loss, disinterested to surroundings and recumbent since five days. Clinical examination revealed dull appearance, pale mucous membrane, tachycardia, temperature (105⁰F) with generalized debility (Fig.1) and slight unilateral corneal opacity (Fig.2) was observed. The dog was tested for the presence of haemoprotozoan through blood smears and Microscopic examination revealed the presence of *Trypanosoma* organism outside the RBCs in Giemsa stain. Other laboratory parameter includes haemoglobin, erythrocyte sedimentation rate, haematocrit value, differential leukocytic count includes neutrophils, lymphocytes, eosinophils, Basophils were measured. The rest of the blood samples were placed into glass tubes for the serum. These tubes were centrifuged and harvested serum was immediately frozen at -20 °C until analysis. The total serum bilirubin, SGOT, SGPT and blood sugar were also measured by standard laboratory procedures.

Treatment protocol

Dog received Diminazine aceturate @ 2.5 mg per kg body weight with half of the total dose

repeat after 12 hour along with antibiotic Oxytetracyclin @ 20 mg per kg body weight for five days.

Supportive therapy includes antipyretic, multivitamin; iron supplementation and liverotropic were also supplemented.

Result and Discussion

In the present case report, Hematological examination included Hemoglobin, haematocrit value and erythrocyte sedimentation rate (Table.1) were carried out and concluded that there was decrease of hemoglobin and haematocrit value, while erythrocyte sedimentation rate was increased in the infected dog the results of the present study are in accordance with [3]. The microscopic examination revealed the presence of *Trypanosoma* organism outside the RBC's (Fig. 2). The blood biochemical parameter did not indicated any significant deviation (Table .2).

Table 1: Hematological parameters

S. No	Parameters	Pre- treatment	Post- treatment
1.	Haemoglobin(gm/%)	6.0	10.2
2.	ESR (mm/Hr)	77	14
3	Haematocrit (%)	16	31
Differential leukocytic count			
1.	Neutrophils (%)	76	69
2.	Lymphocytes (%)	20	28
3.	Monocytes (%)	01	01
4.	Basophils (%)	00	00
5.	Eosinophils (%)	03	02



Fig 1: Generalized debility



Fig 2: Unilateral corneal opacity

There are a number of effective trypanosomacidal agents for dogs including suramin, quinapyramine and diminazene but single dose of diminazine diacetate is effective in eliminating the natural trypanosomiasis infection in canine [6],

but in present case dog administered with single dose of diminazine (2.5 mg/kg body weight) whereas [5] administered single dose of diminazene acetate @ 3.5 mg/ Kg body weight for the successful treatment of the dog with Trypanosomiasis.

Table 2: Blood biochemical parameters

S. No	Parameters	Pre-treatment	Post-treatment
1.	Blood glucose (mg/dl)	62	78
2.	Total bilirubin (mg/dl)	0.70	0.30
3.	S.G.P.T(IU/l)	22	21
4.	S.G.O.T(IU/l)	19	23

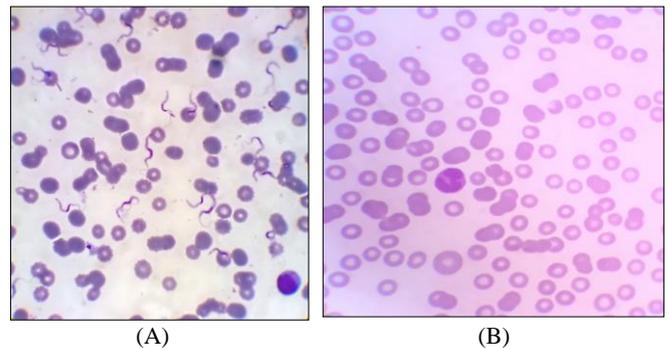


Fig 2: (A) Trypanosoma Organism in blood smears & (B) absence of organism post-treatment

Conclusion

From the present case report, we can conclude that Diminazine Aceturate @ 2.5 mg/kg body weight is effective in therapeutic management of canine Trypanosomiasis.

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