TRYPANOSOMIOSIS IN AN INDIAN MULE AND ITS THERAPEUTIC MANAGEMENT

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Received: 15.10.2018; Accepted: 19.08.2019

SUMMARY

A two years old intact mule stallion was presented to the mobile equine clinic of the Donkey Sanctuary India, with a history of un-thriftiness, anorexia, depression, progressive emaciation, mild ataxia and wobbling gait and hindquarter instability. On clinical examination, the mule had elevated temperature and decreased pulse rate. The conjunctival mucous membrane was pale with petechial hemorrhages. The lymph nodes were enlarged. The hematology showed a decreased PCV, hemoglobin and erythrocyte level along with leucopenia. The peripheral blood smear confirmed trypanosomiasis. The mule was treated with Inj. Diminazine aceturate (7 mg/Kg) along with supportive therapy. The mule showed marked improvement after the end of the treatment and it recovered uneventfully.

Keywords: Mule, Therapeutic management, Trypanosomiasis

The donkey population has remained unchanged in the last two decades despite a decrease in the overall population of equids, emphasizing the usefulness of the donkey as a draught and pack animal (Kumar *et al.*, 2009). Blood borne parasitic diseases of sub tropical and tropical countries are caused by several species of trypanosomes. Horses, mules and donkeys are succeptible, donkeys are considered to be the reservoir host. In equines, Trypanosoma equiperdum causes dourine and *T. evansi* causes Surra. The typical clinical expression of surra can be described in camels and horses while donkeys, asses, and mules are of lower susceptibility (Desquesnes *et al.*, 2013). The following case describes a positive case of *T. evansi* infection in an Indian mule and its therapeutic management.

A two year old intact Mule stallion was presented to the mobile equine clinic of "The donkey Sanctuary India", Gwalior project with a history of unthriftiness, anorexia, depression, progressive emaciation with a body condition score of about 2, mild ataxia and wobbling gait with hindquarter instability. On clinical examination, the mule had increased rectal temperature (38.9 °C), pulse rate (58 bpm) and respiration rate (28 breaths/min). The conjunctival mucous membrane was pale with petechial hemorrhages. The lymph nodes were enlarged. The serum hematological parameters showed a decreased PCV (20%), hemoglobin (7.5) and erythrocyte level along with leucopenia.

The peripheral blood smear was collected from the ear vein and was examined as a thin blood smear after staining with Giemsa stain. Upon examination, trypanosome species were identifiable (Fig. 1). Based upon the history, clinical signs, hematology and blood smear examination; the case was confirmed as Surra/



Fig. 1. Trypanosoma species in the peripheral blood smear

Trypanasoma evansi infection transmitted by tabanid flies.

The mule was treated with Diminazine aceturate (berenil) as a single dose of 7mg/kg body weight, deep intramuscular injection, Inj. Flunixine meglumin, nonsteroidal anti-inflammatory injection @ dose 1.1 mg/kg body weight intravenously, Inj. Normal Saline @10ml/kg intravenously and B-complex injection intramuscularly. The supportive therapy was continued for 3 days. The mule showed marked improvement after the end of the treatment and it recovered uneventfully, even though the mule took about six months to show considerable change in its body condition score.

Trypanosomiosis is a blood born parasitic disease of sub-tropical and tropical climate caused by several species of trypanosome species (Brown and Bertone, 2002). *T. equiperdum*, the cause of Dourine is transmitted venerally whereas *T. evansi*, the cause of surra is transmitted by many species of tabanid flies (Svendsen, 1998). Though horses, mules and donkeys are susceptible, more severe disease occurs in horses, where as donkeys infected with *T. evansi* is more resistant to clinical signs than horses, but may show the signs as in this case. Mules are said to be a

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susceptible as horses to T. evansi (Uilenberg, 1998) but other texts indicate that a milder chronic form of the disease tends to occur in the mule (Luckins, 1999) as noticed in this case. Treatment of equine trypanosomiosis is extrapolated from regimes in other livestock. There is little evidence for many trypanocides that are used in donkeys. Resistance has been also documented in donkeys (Assefa and Abebe, 2001). Diminazine at therapeutic doses can produce severe nervous signs and sometimes death in donkeys. As reported by Tuntasuvan et al. (2003), the current case recovered by administering diminazine without any visible adverse reactions. The successful recovery of this case could be because that the mule just about to exhibit the nervous signs, and if once the nervous signs establishes, treatment of trypanosomiosis is unlikely to be successful as the trypanocides do not cross the blood brain barrier.

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