CLINICAL STUDIES AND THERAPEUTIC MANAGEMENT OF BABESIOSIS IN GIR ANIMALS

ABSTRACT

Key words: Babesiosis, Diminazene aceturate, Imidocarb dipropionate, Haematobiochemical, Blood smear, PCR, Gir animals.

The present study was undertaken for the period of eight months (November 2016 to June 2017) where in 100 Gir animals selected for the screening in relation to clinical and sub clinical infection of babesiosis sheltered around Junagadh district of Gujarat state with a view to study the diagnosis of babesiosis with haematobiochemical changes and therapeutic management of clinical cases of babesiosis. The diseased Gir animals included in the study were evaluated for general clinical examination which was further substantiated by special diagnostic techniques viz., stained blood smear examination, PCR test, so as to arrive at an appropriate diagnosis.

Total 100 Gir animals was screened for diagnosis of babesiosis in which 20 Gir animals clinically infected with Babesia were subjected to clinical examination for presence of ticks on the body. Out of 20 Gir animals, 17 were infested with the ticks which were identified as Rhipicephalus (Boophilus) microplus.

Twenty Gir animals clinically affected with babesiosis showed clinical signs of anorexia, emaciation, pale mucous membrane of eye and dullness and depression. The other signs were high fever, serous nasal discharge, congested mucous membrane of eye in initial stage, reluctance to move, decreased milk yield, salivation, lacrimation from eye and haemoglobinurea. The rectal temperature, heart rates and respiration rates per minute were increased in affected Gir animals.

Total 100 thin blood smears were examined by Giemsa stain out of them 40 (40 %) blood smears were found positive on stained thin blood smear examination for babesiosis. The molecular detection of babesiosis in Gir animals was done by
conventional polymerized chain reaction (PCR). A total of 100 suspected blood samples were processed for detection of *Babesia* out of which 67 (67%) were found positive in PCR. Comparative study of diagnosis based on clinical signs, blood smear examination and PCR was conducted. Clinical signs diagnosed low proportion (20%) of *Babesia* infection and blood smear examination picked up 40 per cent of infection, whereas PCR detected 67 per cent of infection.

In the present study, haemato-biochemical analysis of infected Gir animals was also performed to rule out the severity of disease condition and probable outcome of disease. Red blood cells count, packed cell volume, haemoglobin concentration, mean corpuscular haemoglobin concentration and platelet counts of infected Gir animals were significantly lower (P<0.001) than that of control group of Gir animals. However, values for the mean corpuscular volume, mean corpuscular haemoglobin, total leucocyte count and differential leucocyte counts were at par in the affected Gir animals as compared to control group.

The significant (P<0.001) increase in aspartate aminotransferase and alanine aminotransferase level was observed in *Babesia* infected Gir animals as compared to control group of animals. The non significant difference in blood urea nitrogen and serum creatinine level was observed in infected Gir animals compared to control group of Gir animals. The blood glucose level was significantly (P<0.001) increase in infected Gir animals as compared to control group of animals. The total serum protein and albumin were significantly (P<0.001) decreased in infected Gir animals as compared to control group. However, there was no significant difference in globulin level among infected Gir animals compared to control group.

In the present study, twenty cases that were diagnosed to have clinical babesiosis were treated with diminazene aceturate @ 3 mg/kg BW and imidocarb dipropionate @ 1 mg/kg BW, deep IM along with supportive therapy and Ketoprofen @ 3 mg/kg BW, IM (NSAID). Supportive therapy and NSAID were used for at least 3 days or depending upon the severity of infection. While one animal from Group-I (Diminazene aceturate) was required second treatment for complete recovery.