VII REFERENCES


VIII ABSTRACT

Serological and molecular studies were conducted on trypanosomosis in captive wild animals viz, tigers, lions, leopards, jaguar, elephants and also camels of three different zoos of Karnataka. The blood smear of 102 wild animals and 11 camels examined did not reveal organisms. The passive haemagglutination test (PHA) was used to screen the serum samples for specific antibodies. Nine (60%) out of 15 leopards, two jaguar, 17 (58.6%) out of 29 tiger and 32 (71%) out of 45 lions were positive. The titre of 1:32 and above was considered positive. Out of 11 elephants 3(27%) were positive and only one (9%) camel was positive by PHA. The Molecular diagnosis by PCR was attempted using primer pair for amplification of 488 bp fragment. Five (45%) out of 11 elephants and nine (90.9%) out of 11 camels proved positive showing amplicon at 488 bp. None of direct blood samples of tigers, lions, leopards and jaguars showed amplicon at 488 bp but the T.evansi isolates of canine, leopard and lions maintained in mice showed amplicon at 488 bp. The nucleotide sequences of these three isolates showed the similarity and diversity which ranged from 92 to 99.6 and 0.4 to 3.5 percent. The heterogeneity in the virulence of these isolates was observed, canine isolate was highly virulent followed by leopard isolate and it was proved by phylogenetic tree analysis that both belonged to same cluster. In contrast, the lion isolate was less virulent and it belonged to different cluster. The epidemiological studies concluded that host factors and genetic level adaptability of T.evansi organisms in lab animals need to be considered and the PCR inhibitory factors in blood of lion, tiger and leopards is required to be investigated.