



Canine Babesiosis

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Babesia is an intraerythrocytic protozoan parasite. Babesiosis due to *Babesia canis* and *B. gibsoni* are quite common in dogs in India, particularly in areas where the vector ticks are present in abundance (Bansal *et al.* 1990). The first report of *B. canis* infection from Kerala has been from Thrissur (Lucy Sabu *et al.* 2001). Very recently *B. gibsoni* organisms were detected in our laboratory from the blood smear of an imported German Shepherd dog referred from Ernakulam.

Babesia canis is large pyriform shaped organism that occur singly, paired or in multiples of two within erythrocytes. Vector ticks include *Rhipicephalus sanguineus*, *Dermacentor reticulatus*, *D. marginatus* and *Haemaphysalis laevis*.

Babesia gibsoni are small being pleomorphic lacks the usual pyriform trophozoites; however signet ring, annular, oval or band like forms are common. *Haemaphysalis bispinosa* and *R. sanguineus* have been incriminated as vectors.

Transmission of *Babesia* is by the bite of infected ticks and it multiplies by repeated binary fission within the

erythrocytes resulting in merozoites. As many as sixteen merozoites of *B. canis* may be seen in a single erythrocyte. Ticks are infected by merozoites during feeding. A complex lifecycle involving both transtadial and transovarian transmission ensures that result in sporozoite formation in cells of the ticks' salivary glands, which is transmitted to the host while feeding.

The severity of the disease varies with the species and strain of the parasite. *Babesia canis* infection may range from peracute to chronic form of the disease. Rise in temperature, capricious appetite or complete refusal to take food and water, listlessness, malaise and anaemia are observed in infected animals. There may be constipation in the beginning, but blood stained diarrhoea in advanced cases. Jaundice is common while haemoglobinuria is rarely observed.

Babesia gibsoni causes chronic type of disease which shows remissions and relapses of fever with progressive anaemia. Splenomegaly and hepatomegaly are common. The dog is reduced to skeleton and has staggering gait.

The anaemia in babesiosis is due to destruction of infected cells and phagocytosis of parasitised and non-parasitised erythrocytes. Death occurs usually due to respiratory failure in acute cases and circulatory failure in chronic cases. CNS manifestations are referred as cerebral babesiosis. Signs may include seizures, weakness and ataxia and are thought to be caused by sludging of parasitised erythrocytes within capillaries of the CNS with subsequent hypoxia.

A definitive diagnosis is based on demonstration of organisms within infected erythrocytes or on positive serology (Burr, 1982).

Treatment

Diminazine aceturate (Berenil) is the most commonly used drug worldwide against Babesiosis. *B. gibsoni* infections are less responsive than *B. canis* infections and hence treatment repeated after 24 hours. Pentamidine isothionate can also be used.

Carried over to page 14

