



Always consult with a veterinarian that you feel comfortable with before diagnosing or treating any disease on your own. This information is for reference only.

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## Babesiosis

### Issue Description

*Canine babesiosis is a disease caused by the intraerythrocytic protozoan parasites Babesiacanis and Babesiagibsoni. Babesiosis is transmitted by ticks to susceptible canine hosts. Rhipicephalussanguineus is the most common tick vector in the United States. Splenectomized dogs, immunocompromised dogs and young dogs between the ages of two and eight months are most susceptible to infection. Canine babesiosis occurs worldwide. Within the United States it is most common in the southeast. Although canine babesiosis is considered uncommon in the U.S., it is of clinical significance due to its morbidity and mortality. It is an important differential when history and clinical signs are consistent with infection and other more common diseases have been ruled out.*

### Diagnosis

In Animals Babesiosis is suspected by observation of clinical signs (haemoglobinuria and anaemia) in animals in endemic areas. Diagnosis is confirmed by observation of merozoites on thin film blood smear examined at maximum magnification under oil using Romonovski stains (methylene blue and eosin). This is a routine part of the veterinary examination of dogs and ruminants in regions where babesiosis is endemic.

Babesia canis and Babesia bigemina are "large babesias" that form paired merozoites in the erythrocytes , commonly described as resembling "two pears hanging together", rather than the "Maltese Cross" of the "small babesias". Their merozoites are approximately twice the size of small babesias.

Cerebral babesiosis is suspected in-vivo when neurological signs (often severe) are seen in cattle that are positive for babesia bovis on blood smear. Outspoken red discoloration of the grey matter on post-mortem further strengthens suspicion of cerebral babesiosis. Diagnosis is confirmed post-mortem by observation of babesia infected erythrocytes sludged in the cerebral cortical capillaries in a brain smear.

### Treatment

Veterinary treatment of Babesiosis does not normally use antibiotics. In animals diminazene (Berenil), imidocarb or trypan blue would be the drugs of choice for treatment of Babesia canis rossi (Dogs in Africa), Babesia bovis, and Babesia bigemina (cattle in Southern Africa).

There is a vaccine that is effective against Babesia canis canis (dogs in the mediterranean region) but this is ineffective against Babesia canis rossi. Babesia imitans causes a mild form of the disease that frequently resolves without treatment (dogs in South East Asia).

The most effective drugs used in the treatment of canine babesiosis include diminazeneaceturate, phenamidineisethionate, and imidocarbdipropionate which are not available or approved for use in the United States. Treatment of canine babesiosis in the U.S. is therefore mostly aimed at treating symptoms. The majority of babesia cases diagnosed in dogs in the U.S. are caused by the less virulent strains of B. canis and dogs frequently recover from these infections naturally with supportive therapy. Clindamycin has been successfully used to treat canine babesiosis and may be considered in refractory or more severe and virulent infections.

### Prevention

Prevention of canine babesiosis is mostly aimed at controlling the vector. It is an important aspect since treatment is not always successful. The environment should be treated to decrease tick numbers, dogs should be treated to control tick infestations, and ticks should be removed from parasitized animals as quickly as detected.

Recently, a vaccine which minimizes the severity of infection was developed. The vaccine is reported to be 70 to

100% effective in diminishing the pathologic effects which typically ensue upon infection. The vaccine is currently available in Europe where canine babesiosis is more common life-threatening disease.

Blood transfusion poses a significant risk to recipient animals, therefore it is recommended that donor animals be tested for infection with babesia organisms. Splenectomy prior to testing significantly improves the likelihood of finding organisms in a blood sample from an infected donor.

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