

What is babesiosis?

- Babesiosis is a vector-borne disease caused by *Babesia* (*B.*) spp., a common protozoal blood parasite in mammals worldwide.
- The small *B. felis* sensu stricto is the most important pathogenic species in cats. It is found mainly in South Africa.
- In Europe, infections with *Babesia* spp. causing mild chronic disease in cats are described only sporadically.

Infection

- *Babesia* parasites are usually transmitted by different tick species. The definitive vector for *Babesia* species in cats has not been identified.
- *Babesia* species replicate in erythrocytes producing merozoites from asexual budding.
- Ticks are infected by ingesting merozoites during feeding. Replication of the parasite within the tick's salivary cells results in sporozoite formation. When infected ticks feed, the sporozoites are regurgitated into the bloodstream of the host.
- *Babesia* species can also be transmitted iatrogenically, e.g. through blood transfusions.

Clinical signs and laboratory findings

- Most clinical signs are secondary to haemolytic anaemia due to intraerythrocytic infection by the parasite: pale mucous membranes, lethargy, anorexia and a rough haircoat. Cats usually adapt to the anaemia and often show only mild clinical signs.
- Concurrent infection with *Mycoplasma haemofelis*, feline leukaemia virus (FeLV) or feline immunodeficiency virus (FIV) can contribute to the clinical presentation and severity of disease.
- Complications of babesiosis include renal failure, pulmonary oedema, hepatopathies and neurologic disorders. Fever and icterus are uncommon in cats.
- Typical laboratory finding is a regenerative, macrocytic, hypochromic anaemia.
- In experimental infection, anaemia is most pronounced approximately three weeks after infection.

- Secondary immune-mediated haemolytic anaemia with anti-erythrocyte auto-antibodies can be seen occasionally leading to a positive Coombs' test and auto-agglutination.
- On serum biochemistry, increased total bilirubin concentration is commonly detected. ALT activity is often significantly elevated. Polyclonal gammopathy has been observed in cats with hypergammaglobulinaemia leading to high total protein concentrations.

Diagnosis

- Babesiosis in cats is usually suspected when merozoites are detected in blood smears. However, detection of the organism on blood smears can be difficult since the level of parasitaemia commonly is very low.
- PCR from whole blood is the best test for definitive diagnosis of *Babesia* species infection in cats. PCR techniques have been developed that are able to detect several *Babesia* species (sequencing usually is required to differentiate infecting species).
- Antibody testing has not been established in cats.

Disease management

- Primaquine phosphate is the treatment of choice for cats infected with *Babesia* species. It should be administered at 0.5 mg/kg orally or intramuscularly 1 to 3 times at 72-hour intervals and followed-up with the same dose once weekly for 3 weeks.
- If there is recrudescence of parasitaemia after 2 to 3 weeks, application of primaquine phosphate should be repeated if the cat is still showing clinical signs.
- Treatment has to be monitored carefully, because dosages exceeding 1 mg/kg can be lethal in cats.
- Chronic persistent infections and recurrence of clinical disease can occur.

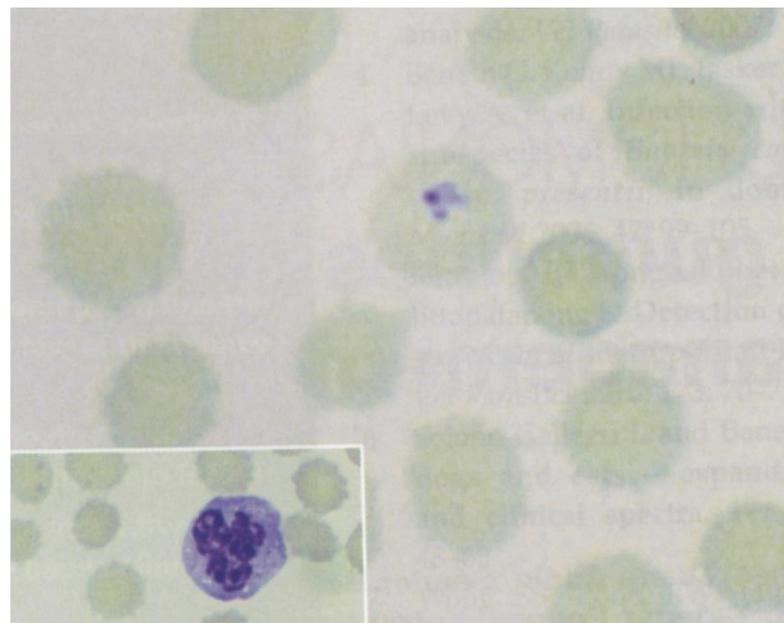
Prevention

- Effective tick control is the best way to avoid infection with *Babesia* species.
- Indoor-only cats have a very small risk of getting infected.



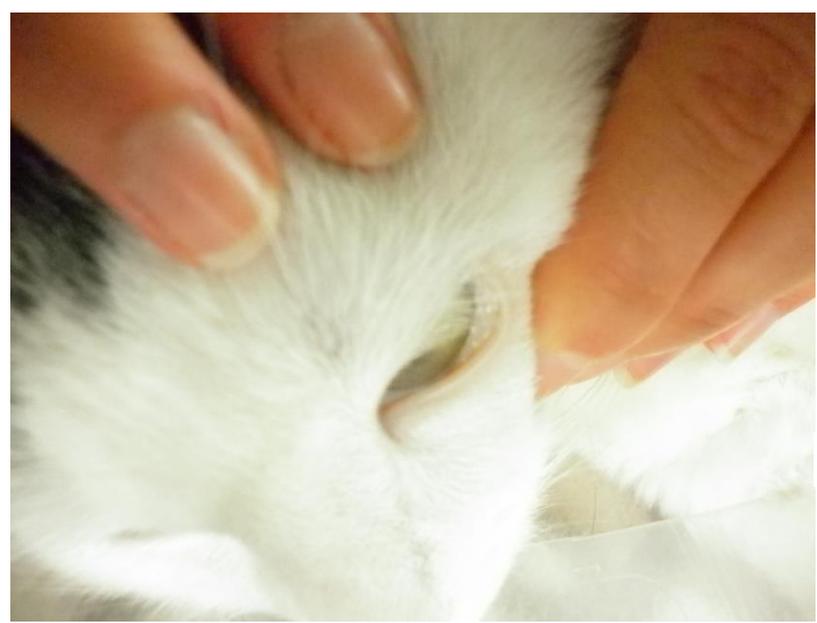
Babesiosis in cats

FACT SHEET



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■ *Blood smear of a cat with Babesia species in erythrocytes.*



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■ *Pale and icteric mucous membranes are rarely seen in cats suffering from babesiosis.*