

Canine vector-borne diseases (CVBD)

Anaplasmosis

Anaplasmosis, previously named granulocytic ehrlichiosis, is caused by several rickettsial species of the genus *Anaplasma*. It is transmitted by ticks to both dogs and humans. Anaplasmosis is a generally milder infection than ehrlichiosis, caused by *Ehrlichia* spp. (e.g. *Ehrlichia canis*), and less likely to become chronic.

Pathogen

- Gram-negative bacteria of the order Rickettsiales, genus *Anaplasma*
- Most relevant for dogs are *Anaplasma phagocytophilum*, previously referred to as *Ehrlichia phagocytophila*, *Ehrlichia equi* or HGE agent (human granulocytic ehrlichiosis agent), and *A. platys*

Vector

- *A. phagocytophilum* is transmitted by *Ixodes* ticks, in Europe mainly *Ixodes ricinus* (Castor Bean tick), in the US *Ixodes scapularis* (Deer tick) and *Ixodes pacificus* (Western Black-legged tick)
- *A. platys*: *Rhipicephalus sanguineus* (Brown Dog tick)

Distribution

- *A. phagocytophilum* has been reported from northern, western and central Europe and from the US
- *A. platys* has been described in southern Europe, North and South America, Asia and Australia

Clinical Signs and Diagnosis

- *A. phagocytophilum* primarily invades granulocytes; *A. platys* infects platelets
- Incubation period of ten days to two weeks for *A. phagocytophilum* infection; clinical signs include fever (>39°C), anorexia, depression, lethargy, splenomegaly, diarrhoea, often lameness and nervous signs in some animals
- Clinical signs of *A. platys* infection include fever and bleeding abnormalities; co-infection with *E. canis* may lead to severe diseases
- Diagnosis is made by demonstration of *A. phagocytophilum* in neutrophils or eosinophils in a Wright or Giemsa-stained blood smear; most important finding in haematological examination is thrombocytopenia together with leucopenia
- Specific molecular testing (PCR), if microscopy has appeared negative, non-specific clinical signs occur or in order to differentiate between *Anaplasma* species

Treatment

- Antibiotic treatment with e.g. tetracyclines (20 mg/kg twice a day for 4 weeks, in subclinical cases longer)

Prevention

- No vaccination available
- Regular tick control, e.g. use of parasiticide with repellent activity, such as (K9)Advantix® spot-on (combination of imidacloprid and permethrin)

Special Characteristics

- *Anaplasma phagocytophilum* group can be transmitted to humans by *Ixodes* ticks, and co-infection with *Borrelia burgdorferi* sensu lato species may occur