

Canine vector-borne diseases (CVBD)

Leishmaniosis

Canine leishmaniosis is caused by *Leishmania infantum*, which is transmitted to humans and animals by the bite of phlebotomine sand flies.

Pathogen

- Protozoa of the genus *Leishmania*
- Most important in dogs in Latin America and Mediterranean area is *L. infantum*, syn. *L. chagasi*

Vector

- Sand flies: Order Diptera, family Psychodidae, with the genus *Phlebotomus* in Europe and *Lutzomyia* in South America
- Feeding around sunset and at night (crepuscular and nocturnal, depending on the species)

Distribution

- Human and canine leishmanioses occur in more than 100 countries, from warm temperate through subtropical to tropical climates
- Canine leishmaniosis is extremely common in the Mediterranean area and South America; also found in Africa, Asia, Middle America

Clinical Signs and Diagnosis

- Chronic disease with an incubation period of months to years
- Once the disease becomes patent, progression is usually rapid and death occurs within a few weeks to months without treatment
- Wide variety of clinical presentations. Clinically affected dogs usually show one or more of nine main clinical features: 1. skin lesions (alopecia, scaling and ulceration), 2. weight loss or poor appetite, 3. local or generalised lymphadenopathy, 4. ocular lesions, 5. epistaxis, 6. lameness, 7. anemia, 8. renal failure or 9. diarrhoea
- Fine-needle aspiration from bone marrow or lymph nodes for microscopic determination of the parasite or PCR
- Blood sample for anti-*Leishmania* antibody assay and PCR

Treatment

- Actual recommended treatment, based on scientific evidences, is meglumine antimoniate in combination with allopurinol
- Many dogs respond and clinical signs resolve
- Treatment is rarely, if ever, curative and dogs usually remain infected for life

Prevention

- Vaccination available in Brazil (Leishmune®), two further vaccines in development
- Use of parasiticides with repellent activity, such as (K9)Advantix® spot-on (combination of imidacloprid and permethrin) during the seasonal period of sand fly activity

Zoonotic potential

- *L. infantum* in Europe and *L. chagasi* in South America, for which dogs are the main reservoir, can cause visceral leishmaniosis in humans
- Visceral form is the most severe kind of leishmanioses in humans with a mortality rate of 100%, if untreated
- Estimated 500,000 new human cases of visceral leishmaniosis per year worldwide, particularly in children or immunosuppressed adults