

Leishmaniosis

Infections in dogs with the protozoan parasite *Leishmania* are widespread in Mediterranean countries. Furthermore, canine leishmanioses have a worldwide distribution and can be found in Asia, Africa and America. First reports on canine leishmaniosis were recently published also from the US, it remains unclear until now whether the disease was imported from abroad, or has already established within the country.

Leishmanioses are vector-borne diseases: the promastigote stage of the parasite is transmitted to the host during the blood feeding of an insect vector, the sand fly. The causative agents of canine leishmaniosis are *Leishmania infantum* in the Mediterranean Basin and the Middle East and *L. chagasi* in South and Central America. Initially, *L. chagasi* was considered to be distinct from *L. infantum*, however, recent molecular studies indicate that they are indistinguishable.

L. infantum/chagasi is also an important human health problem and dogs serve as the main reservoir animal. Several studies showed that the prevalence of human leishmaniosis could be significantly decreased with control of leishmaniosis in dogs.

The Old World sand flies belong to genus *Phlebotomus*, the New World ones to the genus *Lutzomyia*. Both these genera are important vectors of *Leishmania* parasites.

Sand flies are nocturnal blood feeders, resting over the hot day away from sunlight in relatively cool and humid places, like cellars, stables, crevices or rodent holes. Once landed on the potential host, the dog or other mammal, they hop over the coat aiming for less hairy place; in the head region they like to bite around the muzzle, eye or mouth. Similarly to other bloodsucking insects, the sand fly saliva contains anticoagulants, vasodilatory peptides and enzymes with antiinflammatory, antihemostatic and anaesthetic properties. These components of saliva are important for transmission and serve as enhancing factors of the parasite infection.

Clinical features of canine leishmaniosis vary widely, while skin lesions are the most usual manifestation. The incubation period is 4 weeks to several years. The pathomechanism of the infection is a combination of chronic inflammation of skin, liver, GI-tract, kidneys, eyes and bones and an immune mediated polyarthritis, glomerulonephritis, arthritis and uveitis. In most cases weight loss is common. Circulating immunocomplexes causing glomerulonephritis, proteinuria and subsequently renal failure is a common cause of death in affected animals.

While in endemic areas most dogs have contact with the parasite, the prevalence of the disease is usually up to 20%. Several treatment regimes are recommended but once a dog got ill the parasites will never be completely eliminated.