

Canine and human dirofilariosis in Slovakia (2005–2015)

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In the past several years in particular, climatic changes but also various anthropogenic factors have caused canine dirofilariosis to gradually expand from endemic foci situated in southern European countries to formerly unaffected areas of central and eastern Europe. In Slovakia, *Dirofilaria repens* was for the first time detected in dogs in 2005, and since then over 4,000 dogs have been investigated and several epidemiological factors have been considered. The first long-term epidemiological research presented here revealed the mean prevalence in individual regions between 2.0% in northern Slovakia and more than 25.0% in the southwestern part of the country with *D. repens* confirmed as a dominant causative agent. Canine dirofilariosis occurred more often in animals older than 3 years, in dogs of large and giant breed size and short-haired animals. The infection was significantly more prevalent in animals kept in rural areas in comparison to urban environments. Counts of microfilariae in dogs' peripheral blood reached the highest levels in May and August. Moreover, an experiment that traced daily microfilarial periodicity in two infested dogs showed the same tendency with peak of circulating mf recorded at 4 a.m. and minimal mf counts at 4 p.m.

The first human case of dirofilariosis in Slovakia was diagnosed in 2007, two years after the infection had been observed in Slovak dog population. Since then, ten human cases caused by *D. repens* have been registered at Institute of Parasitology SAS: seven subcutaneous, two ocular and one pulmonary, but it is likely that a lot of cases are undiagnosed seeing that this infection is still omitted by physicians. Seven of the patients were males and three of them were females; the age of patients varied between 15 and 72 (mean 49). Only two of them lived in northern part of Slovakia, the rest eight affected people came from southern regions of the country considered to be an endemic area for canine dirofilariosis.

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