Canine leishmaniosis (CanL) caused by Leishmania infantum (synonym with Leishmania chagasi) is currently a major zoonotic disease endemic in more than 70 countries across four continents [1]. The majority of epidemiological studies in canine populations have been based on the detection of antibodies to Leishmania in cross-sectional investigations. Seroprevalence in southern Europe ranges from less than 5% to more than 30% depending on the region [2]. Based on serological data from Italy, France, Spain and Portugal, it was estimated that at least 2.5 million (out of 15 million) dogs were infected in these countries [3].

In the Old World, dogs are the primary reservoir of L. infantum for humans and other animals in many geographical areas of Southern Europe, North Africa and Asia [1]. A reservoir host is an individual or a population chronically infected with the causative agent of a disease and that can act as a source of infection to humans and other hosts [4]. Reservoirs of Leishmania should be abundant, infected at a high proportion, attractive and infectious to the sand fly vectors, and able to maintain infection year-round. Due to their high density, dogs seem to be the only domestic animal species that naturally maintain zoonotic populations of Leishmania parasites [5], but infections have also been reported in many other domestic and wild mammals [6, 7].

In several regions of Southern Europe where zoonotic visceral leishmaniosis (ZVL) is endemic, L. infantum subclinical infections have been recorded in domestic cats; and sporadic cases of disease have also been described in the same animals. The categorization of cats as primary, secondary or accidental reservoir hosts is still unclear and the role of these animals in the epidemiology of L. infantum needs further attention [8]. In the past decade, some confirmed cases of cutaneous leishmaniosis caused by L. infantum in horses have been reported in Southern Europe [9, 10]. Humoral and cellular immunity tests have shown that exposure is much more frequent than disease in domestic equines [11, 12].

Among the wide range of wild carnivores found infected with L. infantum, the frequency of reports highlights the red fox (Vulpes vulpes) in southern Europe [7, 13]. In the Old World, carnivores such as gray wolves (Canis lupus), golden jackals (Canis aureus) [14], Iberian lynxes (Lynx pardinus), genets (Genetta genetta), Egyptian mongooses (Herpestes ichneumon) and several species within the family Mustelidae have also been found infected with L. infantum [15, 16]. It is assumed that sylvatic canids may be additional sources for human and canine infection [15], but the existence of a sylvatic cycle independent from infected domestic dogs is questionable [5].

A notable feature of studies in domestic and wild hosts other than the domestic dog is the low proportion of infections with clinical expression [6]. Clinical leishmaniosis has been reported for the gray wolf in Croatia [17]. Other single reports of disease in mammals include a seal (Monachus monachus) in the Mediterranean [18]. Bennett’s or red-necked wallabies (Macropus rufogriseus rufogriseus) [19, 20] and northwest Bornean orangutans (Pongo pygmaeus pygmaeus) housed in Madrid and Barbary lions (Panthera leo leo) [22] in Montpellier were found clinically affected with leishmaniosis due to L. infantum.

Infections in rodents from Southern Europe have been reported mainly for the black rat (Rattus rattus) [23], but also for the brown rat (Rattus norvegicus) and house mouse (Mus musculus) [24]. Since 2009, more than 400 human cases of ZVL have occurred in Fuenlabrada, southwestern part of Madrid community, along with the identification of a probable new reservoir, the lagomorph Iberian hare (Lepus
granatensis) [25, 26]. A high prevalence of Leishmania DNA has been found in European brown hares (Lepus europaeus) from Greece [27].

The transmission of L. infantum by domestic dogs constitutes the main route for zoonotic infection in most endemic areas globally [1]. Apart of dogs, infectiousness to vectors has been confirmed by xenodiagnosis in humans, black rats, domestic cats, Iberian hares and wild European rabbits (Oryctolagus cuniculus) [28], which have the potential to act as reservoirs of L. infantum [6]. These hosts can act as a source of infection to sand flies, but their role as primary or secondary reservoirs requires further study at the population rather than individual level.

REFERENCES

18. Toplu N, Ayoğan A, Oguzoglu TC. Visceral leishmaniosis and parapoxvirus infection in a...


