

Assessing canine leishmaniosis in central Italy: a two-year serological study in owned dogs

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Background

Canine leishmaniosis (CanL) caused by *Leishmania infantum* is an important zoonosis in the Mediterranean basin where domestic dogs, in close contact with humans, are considered the main reservoir hosts. CanL is endemic in Italy, with the highest prevalence in southern and insular regions, according to the distribution of the sand fly vector species and of the dog reservoir [1,2]. In Central Italy, CanL has been scantily investigated with a recent prevalence of 2.5% reported in kennel dogs (3) and of 74.3% in owned dogs (4).

Material and Methods

A retrospective study was conducted from January 2021 to December 2022 to evaluate the seroprevalence of *L. infantum* in owned dogs admitted at the CDVet Research laboratory (Rome, Italy) for routine screening or with clinical suspicion of leishmaniosis. Sera were subjected to an indirect immunofluorescence antibody test (IFAT) for the detection of specific IgG against *L. infantum* (MegaFLUO Leish, Megacor Diagnostik GmbH) using the cutoff dilution of 1:80, as recommended by LeishVet guidelines [5].

Results

A total of 14,322 serum samples (5,205 in 2021, and 9,117 in 2022) were collected for the diagnosis of *Leishmania*. Although samples were collected from 28 provinces across 13 Italian regions, 94% of these were from Rome province (Latium region). The overall rate of CanL infection was 38.5%, with antibody titres ranging from 1:80 (17%), 1:160 (12%), 1:320 (5%), 1:640 (22%), 1:1280 (14%), 1:2560 (12%) to 1:5120 (17%), confirming the high circulation of the parasite in the country. The seroprevalence in the three most heavily sampled regions was as follows: Latium 38.3% (N=13,693), Umbria 35.8% (N=232), and Marche 54.4% (N=202). For the most represented region, Latium, 2021 and 2022 the rate of positive samples was 29.7% and 43.1%, respectively.

Conclusions

This study unveils a concerning high prevalence of *Leishmania* infection in Central Italy, confirming a widespread presence of the parasite within the dog reservoir. The elevated infection rates observed in the Marche, Latium, and Umbria regions further underscore the geographic disparity and potential regional hotspots of *Leishmania* transmission. The upward trend in rates detected in Latium suggests an intensification of *L. infantum* circulation, raising significant public health concerns.

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