SURVEILLANCE OF *Leishmania infantum* IN THE MUNICIPALITY OF NATAL/RN

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Leishmania infantum, the main etiologic agent of visceral leishmaniasis (VL) in Brazil, is primarily transmitted by the sandfly *Lutzomyia longipalpis*. Humans and dogs are susceptible to developing VL and dogs are the main domestic reservoirs, playing a crucial role in parasite transmission. Therefore, this study aimed to determine the status of *L. infantum* infection in dogs around households of cases of human VL in the municipality of Natal/RN. Between 2003 and 2023 a surveys were conducted around recent human VL cases, with a 300-meter radius for canine serology. Overlapping radii expanded the coverage area. Rapid testing (TR DPP) was used, followed by ELISA for confirmation. A total of 69,798 dogs were tested and 8.84% were seropositive (n=6,179) and the peak occurred in 2017 (reaching 21.4% of all seropositive). The majority of dogs surveyed were from the North district, representing 82.7%, followed by the West district with 14.3%. East and South districts accounted for 0.3% and 2.7%, respectively. Dogs from the North district were 2.8 times more likely to be seropositive ($p<0.0001$). Within north zone, Nossa Senhora da Apresentação neighborhood presented the higher seroprevalence reaching the peak in 2014 (19.2%).The finds highlights the hole of high dogs seroprevalence that may sustain the *L. infantum* transmission in the North Zone of Natal. Similarly, a VL endemic area in Piauí presented 12,28% of dogs' seropositivity. In contrast , a study developed in Sergipe reported a higher seroprevalence (34.69%), reinforcing the importance of dogs in *L. infantum* cycle maintenance. Finally, continuous surveillance aiming to determine the status of *L. infantum* infection in dogs signal for potential cycles of *L. infantum* infection at a population level, with in infection in the more affected areas varying from 10% to 32% indicating the need of measures to decrease burden including use of collars and determining the magnitude of *L. infantum* vertical transmission.

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