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RISK ASSESSMENT FOR A VISCERAL LEISHMANIASIS OUTBREAK IN BIGUAÇU (SANTA CATARINA, BRAZIL)

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Abstract

Leishmaniasis is a neglected tropical disease caused by protozoa of the genus *Leishmania*, transmitted by infected female sandflies. Santa Catarina (SC) was the last state in Brazil to report autochthonous cases of Visceral Leishmaniasis (VL), with the first case of Canine Visceral Leishmaniasis (CVL) in Florianópolis in 2010. To date, it remains the only municipality in the State with autochthonous cases in dogs and humans. The main vector of *Leishmania infantum*, *Lutzomyia longipalpis*, has not been detected in SC. However, there is limited data on sandfly fauna and CVL cases in the Metropolitan Region of Florianópolis. This study aims to identify the sandfly fauna of the Municipality of Biguaçu (SC, Brazil), a neighboring municipality of Florianópolis, and assess the natural infection by *L. infantum*, while also investigating CVL occurrence using non-invasive canine conjunctival swab (CS) samples. Twelve monthly sandfly collections were carried out with CDC light traps in three locations of the municipality. The presence of *L. infantum* was assessed by conventional PCR using primers designed to target kDNA and tested for specificity using *L. infantum* and *L. braziliensis* DNA. Additionally, sensitivity was tested using a 10-fold dilution of *L. infantum* DNA. CS were collected from 217 dogs at Departamento de Bem-Estar Animal (DIBEA) in Biguaçu. In total, 367 sandfly specimens were captured. Among the ten species identified, three have potential vector capacity, *Migonemyia migonei*, *Nyssomyia neivai,* and *Pintomyia fischeri*, and it is the first record of *Psychodopygus geniculatus* in SC. PCR assay detected only *L. infantum*, with concentrations up to 0.1 picogram. One dog from DIBEA tested positive, and *L. infantum* infection was confirmed by DNA sequencing. Until now, 50 female sandflies have been analyzed by PCR, with none testing positive. These findings indicate a potential VL outbreak risk in Biguaçu, highlighting the need for continuous surveillance and control measures.

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