RESUMO SIMPLES - PROTOZOÁRIOS E AGENTES TRANSMITIDOS POR VETORES DE IMPORTÂNCIA EM SAÚDE

MOLECULAR DETECTION OF DIROFILARIA IMMITIS IN DOGS FROM INDIGENOUS VILLAGES IN THE STATE OF RIO DE JANEIRO

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Indigenous villages in the Costa Verde region, particularly in the municipalities of Angra dos Reis and Paraty, maintain close relationships with Atlantic Forest ecosystems. These villages are situated in territories of high biodiversity but are marked by socio-economic vulnerabilities and increasing exposure to zoonotic agents. In this context, Dirofilaria immitis, a nematode transmitted by mosquitoes of the Culicidae family, has a worldwide distribution and is

responsible for heart failure in dogs after parasitizing the pulmonary arteries and right ventricle of the heart. This is also relevant to public health because, although uncommon, it can cause pulmonary dirofilariasis in humans. This study aimed to investigate the presence of D. immitis in dogs from Indigenous villages in the state of Rio de Janeiro. In the present study, blood samples were collected from 152 dogs from different Indigenous villages: Sapukai (Angra dos Reis/RJ), Paraty-Mirim, Araponga, Rio Pequeno, Iriri Pataxó (Paraty/RJ), Mata Verde Bonita, and Céu Azul (Maricá/RJ). Molecular diagnosis was used to detect parasite DNA in blood samples. Total DNA was extracted from the blood samples, and qPCR was performed using a TaqMan system based on the gene encoding cytochrome c oxidase subunit 1 (Cox1). The primers used were Fil.COI.749 and dg.Fil.COI.914, which amplify a 166 base pair (bp) fragment from members of the Onchocercidae family. The specificity of the system was established using the TaqMan probe P. imm. COI.777, which is specific for D. immitis. qPCR was performed, and the samples were analyzed in duplicate using 96-well plates. The thermocycling conditions were as follows: 50°C for 2 min, 95°C for 10 min, followed by 40 cycles of 95°C for 30 s, 55°C for 30 s, and 72°C for 30 s, during which fluorescence was measured. Of the 152 samples, 26 (17.1%) tested positive for D. immitis by qPCR, with a mean Cq value of 25.55 cycles. The presence of D. immitis in dogs from Indigenous villages represents a health issue for the animals and may be a risk factor for Indigenous community health. The occurrence of dirofilariasis and other vector-borne diseases in dogs from Indigenous communities, although still poorly documented, poses a significant public health concern. The One Health approach shows promise for Indigenous health policies as it recognizes the interdependence between human, animal, and environmental health—an essential factor for populations that rely directly on natural resources.

Palavras-chave: indigenous peoples; dirofilaria immitis; dogs; one health.