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

DETECTION OF TRYPANOSOMATIDAE AGENTS IN IXODIDS FROM DOMESTIC AND WILD HOSTS IN SOUTHEASTERN BRAZIL

?Isadora Dos Santos Dias (isadorasdias100@gmail.com)

Olivia Zen Gianfrancisco (oliviazen.gianf@gmail.com)

Carolina Melo De Souza Nunes (carolmelodsn4@gmail.com)

Thaís Silva Oliveira (tholiveira.vet@gmail.com)

Jonathan David Ribas Chagas (jonatachagas@hotmail.com)

Ana Clara Rodrigues Felix Da Silva (anaclararf2001@gmail.com)

Ellen Meireles Brandão (ellenmeirelesvetcat@gmail.com)

Diogo Dos Santos Maia (dm.patoclin@gmail.com)

Matheus Dias Cordeiro (mathcordeiro@hotmail.com)

Bruna De Azevedo Baêta (babaeta@ufrrj.br)

The Trypanosomatidae family encompasses a vast diversity of flagellated protozoa, ranging from monoxenous organisms, restricted to invertebrates, to heteroxenous pathogens of high global medical and veterinary relevance. Although classic vector transmission is frequently associated with insects, the role of ticks of the Ixodidae family in the epidemiology of these infections has aroused increasing interest. These arthropods, during blood feeding, can act as mechanical or biological vectors, facilitating the circulation of protozoa between

different ecological niches. The interface between wild and domestic environments is particularly critical in this process; animals such as capybaras (Hydrochoerus hydrochaeris), which move freely between forest areas and peri-urban zones, act as amplifiers of various pathogens. Similarly, production animals, such as cattle (Bos taurus), and companion animals, such as dogs (Canis lupus familiaris), by sharing these environments, become sentinels or reservoirs. In this scenario, molecular biology plays a central role in diagnosis because, unlike direct microscopy, techniques based on Polymerase Chain Reaction (PCR) allow for the detection and genetic characterization of the parasite, clarifying silent transmission routes. Given this problem, the main objective of this study was to identify, using PCR, the presence of parasites from the Trypanosomatidae family in ticks collected from domestic and wild hosts. For the research, 436 ticks were analyzed, encompassing different developmental stages, collected from four host groups: capybaras (n=142 ticks), cattle (n=264 ticks), dogs (n=29 ticks), and frogs (Anura) (n=1 tick), in different municipalities of the states of Rio de Janeiro and Minas Gerais. The samples were packaged in polypropylene tubes and sent to the Laboratory for the Study of Parasite-Host Interaction (LEIPH), located at the Federal Rural University of Rio de Janeiro (UFRRJ). Morphological identification was performed using a specific taxonomic key for the Ixodidae family. Tick DNA extraction was performed using the "HotSHOT" method. As a quality control of the extraction technique, all samples were subjected to amplification of a partial fragment of the tick ITS2 nuclear gene (~1200 bp). Subsequently, the samples were tested for pathogen-targeted PCR assays with the 24Sα rRNA gene (~270 bp) targeting the Trypanosomatidae family, and the results were visualized by electrophoresis. All samples tested for the ITS2 gene amplified. Thus, of all DNA samples analyzed, 4.1% (18/436) showed amplification for the Trypanosomatidae target gene. The distribution of these samples consisted of four ticks of the species Amblyomma sculptum (3 adult males and 1 adult female) and one tick of the species Amblyomma dubitatum (nymph) collected from capybaras, five of the species Rhipicephalus linnaei (3 nymphs, 1 adult male and 1 adult female) collected from dogs, and eight of Rhipicephalus microplus (8 adult females) collected from cattle. It is concluded that trypanosomatid DNA was present in ticks of the genera Amblyomma and Rhipicephalus; however, molecular detection may only reflect blood feeding on the infected host, not necessarily confirming the vector competence of these ticks in parasite transmission. Therefore, further investigations are needed to better clarify the role of the tick in this scenario.

Palavras-chave: vectors; ticks; pcr; trypanosomatids; public health.