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INFECTION BY *Trypanosoma cruzi* AND FOOD SOURCE OF TRIATOMINES FROM RURAL AREAS OF MUNICIPALITIES IN THE SOUTHEAST OF THE STATE OF PIAUÍ, BRAZIL

MARICÉLIA DE AQUINO SANTANA[1], FILIPE MELO DA SILVA[2], LUCAS ABRANTES BATISTA[1], ODAIR JOSÉ QUEIROZ[1], KLEBER RIBEIRO FIDELIS[3], LETÍCIA MIKARDYA LIMA SALES[1], FLÁVIO CAMPOS FERREIRA[4]; RITA DE CASSIA MOREIRA DE SOUZA[4]; CARLOS RAMON DO NASCIMENTO BRITO[1], ANDRESSA NORONHA BARBOSA DA SILVA[1], ANTONIA CLAUDIA JÁCOME DA CÂMARA[1], VAGNER JOSÉ MENDONÇA[5], LÚCIA MARIA DA CUNHA GALVÃO[1]

[1]UNIVERSIDADE FEDERAL DO RIO GRANDE DO NORTE, NATAL, RIO GRANDE DO NORTE, BRASIL;
[2]INSTITUTO OSWALDO CRUZ, TERESINA, PI, BRASIL;
[3]INSTITUTO OSWALDO CRUZ, RIO DE JANEIRO, RJ, BRASIL;
[4]INSTITUTO RENÉ RACHOU FIOCRUZ/MINAS, BELO HORIZONTE, MG, BRASIL;
[5]UNIVERSIDADE FEDERAL DO PIAUÍ, TERESINA, PI, BRASIL.

[1]mariceliaaquino832@gmail.com

Abstract

High rates of peri- and intradomiciliary infestation by triatomines infected with *Trypanosoma cruzi* and an estimated seroprevalence of 5.8% for human infection have been reported in the southeastern region of the state of Piauí. Thus, this study aims to evaluate the natural infection of triatomines by *T. cruzi* through fresh examination of intestinal contents and xenoculture. The identification of the food source of these vectors was performed using sequencing of the mitochondrial 12S rRNA gene to detect the blood in the triatomine's intestine. The consensus DNA sequences from the intestinal contents were compared with sequences deposited in GenBank using the BLASTn tool to identify the blood in the triatomine's intestine. A total of 520 triatomines were captured, belonging to the species *Triatoma brasiliensis* (n=468), *Triatoma pseudomaculata* (n=48), and *Panstrongylus lutzi* (n=4). Nymph and adult stages of *T. brasiliensis* were found in both peri- and intradomiciliary environments, while *T. pseudomaculata* was captured in peridomiciliary areas. *P. lutzi* was found exclusively in the peridomiciliary environment in the adult stage. The infection rate in *T. brasiliensis* was 10% (10/100) in the intradomicile and 5.9% (22/368) in the peridomicile, while for *P. lutzi*, it was 25% (1/4) in the peridomicile. No infected specimens of *T. pseudomaculata* were identified. The food source was identified in 19 infected specimens of *T. brasiliensis*. *Homo sapiens* DNA was observed in 42.1% (8/19), *Felis catus* in 26.3% (5/19), and *Canis familiaris* in 21% (4/19). The presence of infected *T. brasiliensis* specimens and the detection of human blood in their intestinal contents indicate a risk of *T. cruzi* transmission to the rural population. These findings reinforce the need for continuous actions to control these vectors and combat the infection in the region.

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