
PRESENCE OF *Triatoma tibiamaculata* (PINTO) NYMPHS IN PERIDOMICILES, IN SALVADOR, BAHIA

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ABSTRACT

Chagas disease is associated with the domiciliation of infected vectors migrating from their natural ecotopes. The appearance of nymphs in the peridomicile, in Salvador, Bahia, confirms the need for epidemiological surveillance. The vectors were captured from 2006 to 2009, by the population and by epidemiological field agents with the Chagas Disease Control Program. Three hundred and sixty two nymphs of the species *Triatoma tibiamaculata* (Pinto, 1926) were captured in the peridomicile and 13.5% of these nymphs were infected with *Trypanosoma cruzi* (Chagas, 1909). Nymphs were near the houses, a possible risk for colonization. Surveillance of the peridomicile is an important element to prevent colonization by disease vectors.

KEY WORDS: Entomological surveillance; Chagas disease; *Triatoma tibiamaculata*; triatomines.

RESUMO

Presença de ninfas de *Triatoma tibiamaculata* (Pinto) no peridomicílio, Salvador, Bahia

A doença de Chagas está associada à domiciliação de vetores infectados provenientes dos ecótopos naturais. O surgimento de ninfas no peridomicílio em Salvador, Bahia, reafirma a necessidade de vigilância epidemiológica. Os vetores foram capturados de 2006 a 2009 pela população e por agentes de endemias no contexto do Programa de Controle da Doença de Chagas. Foram capturadas 362 ninfas da espécie *Triatoma tibiamaculata* (Pinto, 1926) no peridomicílio, 13,5% das quais estavam infectadas com *T. cruzi* (Chagas, 1909). As ninfas estão próximas aos domicílios, o que

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representa um possível risco de colonização. A vigilância no peridomicílio constitui importante fator de prevenção da colonização de vetores da doença.

DESCRITORES: Vigilância entomológica; *Triatoma tibiamaculata*; Doença de Chagas; triatomíneos.

INTRODUCTION

The Brazilian tropical rain forests, savannas, and xerophilic regions are being subjected to anthropogenic pressures that lead to the formation of new environmental mosaics. These ecological modifications may influence the emergence or re-emergence of anthroponozoonotic diseases with consequences to the local economy. Within this context Chagas disease (CD) or American trypanosomiasis, is a parasitic disease that affects nearly 8 million people in the tropical regions of Central and South America (Jansen & Emperaire, 2006; Noireau & Jurberg, 2006). In its beginnings, CD depended on the domiciliation of infected vectors that came from the natural ecotopes (Dias, 2001). Currently in Salvador, Bahia, a large number of people live in the peripheral areas or in land invasions with possible risks for occurrence of triatomines. This is happening in the neighborhoods around the Region of the Paralela Avenue, Salvador, which is undergoing increasing urbanization, with the presence of various housing complexes, from luxury mansions to precarious houses in land invasion areas. These dwellings enter the natural environments, placing the inhabitants in close contact with the wild vectors of *T. cruzi* (Guimarães & Tavares-Neto, 2006).

The destruction of these ecosystems has caused the decrease or disappearance of the natural blood sources for the wild triatomines, such as mammals and birds. As a result, invasion of houses or their surroundings has occurred as these vectors search for their blood meal (Dias & Dias, 1979; Dias-Lima & Sherlock, 2000).

MATERIAL AND METHODS

In a study conducted between 2006 and 2009 in the municipality of Salvador as part of the surveillance actions performed by the Center for Zoonosis Control (CZC) the Alphaville neighborhood (latitude 12° 94' 00" South and longitude 38° 40' 00" West) was studied. This was a luxury condominium built in an Atlantic Forest remnant deforested for residential construction. Through the Chagas Disease Control Program (CDCP), 988 triatomines were found. These vectors were trapped by the population and sent to the Information Stations for Triatomines – places for disposal of triatomines installed in the basic health units – as well as by the field researchers during their routine sampling activities.

RESULTS

Of the vectors found, 982 (98.3%) were *Triatoma tibiamaculata* (Pinto, 1926), and 6 (0.6%) were *Panstrongylus geniculatus* (Latreille, 1881). Of them, 626 were adults (63.4%) and 362 (36.4%) were nymphs. All the captured nymphs belonged to the species *T. tibiamaculata*. Of these nymphs, 49 (13.5%) were infected with *T. cruzi*, 114 (31.4%) were negative, and it was not possible to evaluate infection in 199 (55%). Of the adults, 37.2% were infected with *T. cruzi*. Regarding the areas where the triatomines were found, the peridomicile registered an occurrence of 27.6% of the captured nymphs, and among these 38.8% were infected with *T. cruzi*. The nymphs (90%) were found outside the home during home visits by agents of the CZC, after the capture of an adult specimen by the residents. In the peridomicile the nymphs were captured in the garage, pool deck, garden and rubbish. The finding of nymphs was associated with the capture of adult specimens in 99% of cases.

DISCUSSION

The peridomicile is a transition zone between the intradomicile and extradomicile. The species found were wild species, with a wide distribution on palm trees. The finding of nymphal stages, in the peridomicile environment, indicates a migration, mainly by adults, and a possible adaptation to an artificial environment. Surveillance actions need to be intensified to avoid the continuity of this process, since the data indicate that eggs and nymphs were developing in the peridomicile. This situation could favor the colonization of these species which would indicate their domiciliation, and increase the exposure of the population with a possibility of changing the epidemiological profile of the disease.

Chagas disease, originally enzootic, became a human health problem through the domiciliation of its vectors. The destruction of their natural habitat and the movement of the triatomines from their wild original ecotopes is what created the domiciliary transmission of the disease (Nascimento et al., 1997).

Surveillance constitutes an important tool to detect the presence of vectors and provides a continuous control for the detection of triatomine colonization. More involvement of the population in this surveillance is important for the management of the vectors and their continuous epidemiological surveillance.

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