Communication/Comunicação

Lutzomyia longipalpis (Diptera: Psychodidae: Phlebotominae) in the region of Saquarema: potential area of visceral leishmaniasis transmission in the State of Rio de Janeiro, Brazil

Lutzomyia longipalpis (Diptera: Psychodidae: Phlebotominae) na região de Saquarema: área potencial de transmissão da leishmaniose visceral no Estado do Rio de Janeiro, Brasil

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ABSTRACT

Introduction: *Lutzomyia longipalpis* is the main vector of *Leishmania infantum chagasi* in the Americas. **Methods:** Phlebotomine captures were conducted during 2008 and 2009 in a rural area endemic for cutaneous leishmaniasis located in the municipality of Saquarema, Rio de Janeiro. **Results**: Among other species captured, we observed the presence of *Lutzomyia longipalpis.* **Conclusions**: This is the first report of the occurrence of *Lutzomyia longipalpis* in this region, demonstrating the potential risk of visceral leishmaniasis transmission in the coastal area of the State of Rio de Janeiro. Therefore, active vigilance by all municipalities in the area is necessary.

Keywords: *Lutzomyia longipalpis.* Visceral leishmaniasis. Rio de Janeiro.

RESUMO

Introdução: *Lutzomyia longipalpis* é o principal transmissor da *Leishmania infantum chagasi* nas Américas. **Métodos:** Capturas de flebotomineos, utilizando armadilhas luminosas, foram realizadas durante 2008/2009 em uma área rural, endêmica para leishmaniose cutânea, localizada no Maciço de Mato Grosso no Município de Saquarema, Rio de Janeiro, Brazil. **Resultados**: Entre outras espécies capturadas observamos a presença da *Lutzomyia longipalpis.* **Conclusões:** Este é o primeiro relato da ocorrência do vetor da leishmaniose visceral (*Lutzomyia longipalpis)* nesta área litorânea do Estado do Rio de Janeiro, significando um risco potencial na transmissão da leishmaniose visceral sendo necessária uma vigilância ativa por todos os municípios próximos.

Palavras-chaves*:* *Lutzomyia longipalpis.* Leishmaniose visceral. Rio de Janeiro.

Visceral leishmaniasis (VL) is a potentially fatal zoonosis. The causative agent *Leishmania infantum chagasi* is transmitted between dogs and humans by blood-feeding female sandflies of the *Lutzomyia longipalpis* (Lutz & Neiva, 1912) species complex[1], the known vector of VL in the New World[2]. Over the last 30 years, the epidemiology of VL in Brazil has changed drastically from a typical rural disease to an urban problem in many cities. Large outbreaks and epidemics of the disease have been reported constantly[3-5]. In the period 2000 to 2008, 29,939 visceral leishmaniasis cases were recorded; the northeast accounted for 17,949 cases, followed by the southeast with 4,972 cases, the north with 4,847 cases, the midwest with 2,149 cases and the southern region with 22 cases.

According to the Brazilian Ministry of Health, the State of Rio de Janeiro is considered an area of sporadic transmission of visceral leishmaniasis. Since the first outbreak of the disease in the municipality of Rio de Janeiro on the slopes of Pedra Branca massif[6], isolated cases have been reported in other municipalities of the state, such Itaguai, Mangaratiba and Angra dos Reis (Ilha Grande)[7].

Previous reports of the vector *Lutzomyia longipalpis* were limited to the following municipalities in the State of Rio de Janeiro: Rio de Janeiro, Mesquita, Itaguai, Mangaratiba, Angra dos Reis (Ilha Grande), Casimiro de Abreu, Petropólis and Rio Bonito[7-11]. Prior to 1978, there are records of this species solely in the municipalities of Rio de Janeiro and Macaé[12].

With the report of several cases of cutaneous leishmaniasis in the localities of Rio Seco and Rio Mole in Saquarema, we decided to investigate the peridomiciliar sandflies in this region. The township of Saquarema (**Figure 1**) is located in the littoral lowland of the State of Rio de Janeiro with an area of 353.2 km^2 and 52,000 inhabitants The climate is humid tropical with an average temperature of 22°C. Secondary vegetation is predominant (30%), dominated by pastures and general fields; however, approximately 25% of the municipality is still covered by disturbed Atlantic forest.

Sandflies were collected in chicken coops in two peridomestic sites in the Rio Seco district, Saquarema (S 22^{0}51′14′′ W 42^{0}29′27′′). This area has rural characteristics, and both peridomiciles were located close to the Mato Grosso massif, where vegetation typical of Atlantic forest is still present. Phlebotomine captures were performed with CDC light traps overnight from 5 pm to 8 am. The sites were sampled from June 2008 to September 2009 at least one night per month. The sandflies were cleared, mounted and identified following the method of Galati[13]. Among the 2,133 sandflies captured belonging to nine species, eight specimens (6 males, 2 females) of *L. longipalpis* were collected in July, August and September 2008. Despite the low densities found, this is the first report of the main vector of visceral leishmaniasis in the phytogeographical region of Saquarema, RJ. In a nearby region, the municipality of Rio Bonito, *L. longipalpis* has already been recorded since 1989[9], but there has been no report of human or canine visceral leishmaniasis in this area.

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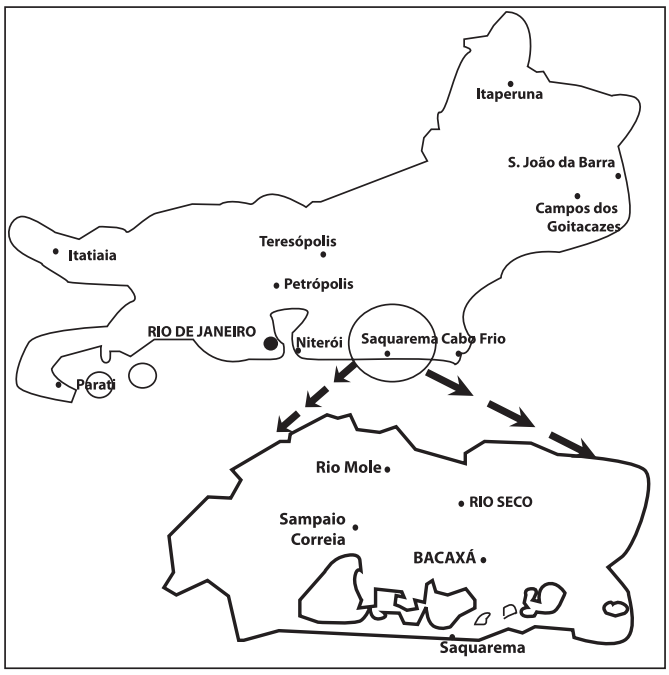

FIGURE 1 - Map of the State Rio de Janeiro, Brazil, showing the municipality of Saquarema.

However, recently, the first autochthonous case of canine visceral leishmaniasis in municipality of Maricá was reported[14]. This report demonstrates the potential risk of VL transmission in the continuous region of the massif of Mato Grosso that includes Maricá, Saquarema and Rio Bonito in the coastal area of the state. The presence of *Lutzomyia longipalpis* at a low low density was first reported in Campo Grande, the capital city of Mato Grosso do Sul, by Oliveira et al.[6], followed by the diagnosis of the first canine case of visceral leishmaniasis. Only a few years later, *L. longipalpis* dominated the sandfly fauna and is now the main species in all catches, with an increasing number of VL cases in the city[15]. A similar dispersion and increase in the numbers of *L. longipalpis* and the establishment of visceral leishmaniasis has occurred in several Brazilian cities. In the light of these reports, the presence of *L. longipalpis* in this region of intense tourism and new urban development indicates that it is necessary to alert the authorities to the potential risk for VL introduction and to implement prophylactic measures in the area.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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