EPIDEMIOLOGICAL OVERVIEW OF ACUTE CHAGAS DISEASE CASES IN BRAZIL (2013–2023)

PANORAMA EPIDEMIOLÓGICO DOS CASOS AGUDOS DE DOENÇA DE CHAGAS NO BRASIL (2013-2023)

PANORAMA EPIDEMIOLÓGICO DE LOS CASOS AGUDOS DE ENFERMEDAD DE CHAGAS EN BRASIL (2013–2023)

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ABSTRACT

The chapter presents an epidemiological analysis of confirmed cases of acute Chagas disease reported in Brazil between 2013 and 2023, based on secondary data from SINAN/DATASUS. During this period, 3,389 cases were recorded, with a marked concentration in the Northern Region, which accounted for 95.4% of notifications, highlighting the persistence of this area as the main focus of the acute phase of the disease in the country. The study showed a predominance of cases among males (53.8%), especially in the 20–39 age group, followed by 40–59 years, indicating a higher occurrence among individuals of working age. The main route of transmission identified was oral, responsible for 84.4% of cases, reinforcing its relevance in the recent epidemiology of the disease, particularly in outbreaks associated with the consumption of contaminated food and beverages. The authors conclude that acute Chagas disease remains an important public health problem in Brazil, emphasizing the need to strengthen surveillance, prevention, and control actions, especially in areas of higher endemicity.

Keywords: Acute Chagas Disease. Epidemiology. Oral Transmission. Public Health.

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RESUMO
O capítulo apresenta uma análise epidemiológica dos casos confirmados de doença de Chagas aguda notificados no Brasil entre 2013 e 2023, com base em dados secundários do SINAN/DATASUS. Nesse período, foram registrados 3.389 casos, com expressiva concentração na Região Norte, responsável por 95,4% das notificações, evidenciando a permanência dessa área como principal foco da fase aguda da enfermidade no país. O estudo mostrou predomínio de casos em indivíduos do sexo masculino (53,8%), especialmente na faixa etária de 20 a 39 anos, seguida por 40 a 59 anos, indicando maior ocorrência em pessoas em idade economicamente ativa. A principal via de transmissão identificada foi a oral, responsável por 84,4% dos casos, reforçando sua relevância na epidemiologia recente da doença, sobretudo em surtos associados ao consumo de alimentos e bebidas contaminados. Os autores concluem que a doença de Chagas aguda permanece como importante problema de Saúde Pública no Brasil, destacando a necessidade de fortalecer as ações de vigilância, prevenção e controle, especialmente nas áreas de maior endemicidade.

Palavras-chave: Doença de Chagas Aguda. Epidemiologia. Transmissão Oral. Saúde Pública.

RESUMEN
El capítulo presenta un análisis epidemiológico de los casos confirmados de enfermedad de Chagas aguda notificados en Brasil entre 2013 y 2023, con base en datos secundarios del SINAN/DATASUS. En este período, se registraron 3.389 casos, con una marcada concentración en la Región Norte, responsable del 95,4% de las notificaciones, evidenciando la permanencia de esta área como el principal foco de la fase aguda de la enfermedad en el país. El estudio mostró un predominio de casos en individuos del sexo masculino (53,8%), especialmente en el grupo etario de 20 a 39 años, seguido por el de 40 a 59 años, indicando una mayor ocurrencia en personas en edad económicamente activa. La principal vía de transmisión identificada fue la oral, responsable del 84,4% de los casos, lo que refuerza su relevancia en la epidemiología reciente de la enfermedad, especialmente en brotes asociados al consumo de alimentos y bebidas contaminados. Los autores concluyen que la enfermedad de Chagas aguda sigue siendo un importante problema de salud pública en Brasil, destacando la necesidad de fortalecer las acciones de vigilancia, prevención y control, especialmente en las áreas de mayor endemicidad.

Palabras clave: Enfermedad de Chagas Aguda. Epidemiología. Transmisión Oral. Salud Pública.

1 INTRODUCTION

Chagas disease is an anthropozoonosis caused by the hemoprotozoan *Trypanosoma cruzi* (order Kinetoplastida, family Trypanosomatidae, subgenus *Schizotripanum*), widely disseminated in the American continent and capable of infecting mammals of practically all orders (Monteiro, 2022; Jansen; Xavier; Roque, 2018). It is a disease of great relevance for Public Health, especially in Latin America, where it remains an important cause of morbidity and mortality (WHO, 2019). It is estimated that more than 7.5 million people are infected with *T. cruzi* in the Americas, while millions remain exposed to the risk of infection, especially in endemic areas (PAHO, 2026).

Human infection with *T. cruzi* can occur by different routes, including vector, accidental, vertical (congenital), transfusion, transplant, and oral (Robertson et al., 2024). In Brazil, although control measures have reduced household vector transmission in several regions, acute Chagas disease still represents a relevant problem, due to the persistence of different transmission mechanisms and the occurrence of outbreaks associated, mainly, with the oral route (Santos et al., 2020). In this scenario, the acute phase of infection takes on special epidemiological importance, as it corresponds to the period of detection of active infection and constitutes a notifiable event (Brasil, 2024).

In humans, T. *cruzi* infection classically presents in an acute phase, followed by the chronic phase, which can manifest itself in indeterminate, cardiac, digestive, or cardiodigestive forms, with different clinical presentations (PAHO, 2026). The acute phase is often asymptomatic, but may progress to fever, malaise, hepatomegaly, and lymphadenopathy. In outbreaks related to oral transmission, in addition to febrile syndrome, manifestations such as facial edema, dyspnea, dry cough, gingivitis, erythema nodosum, and lower limb edema have also been described (Silva-dos-Santos et al., 2017; Yasuda, 2022).

In Brazil, the Notifiable Diseases Information System (SINAN) is an important tool for the registration, consolidation, and analysis of reported cases of acute Chagas disease, making it possible to evaluate their temporal, spatial, and demographic distribution. The analysis of these records is essential to expand knowledge about the epidemiological profile of the disease and to support the strengthening of surveillance, prevention and control actions. In this sense, this chapter presents a survey of confirmed cases of acute Chagas disease reported in Brazil from 2013 to 2023, with emphasis on the characterization of the epidemiological profile of these cases.

2 MATERIAL AND METHODS

This is an exploratory, descriptive study with a quantitative approach, developed based on secondary data regarding cases of acute Chagas disease reported in Brazil. The information was obtained from the Notifiable Diseases Information System (SINAN), made available by the Department of Informatics of the Unified Health System (DATASUS), and extracted and organized using the TabWin software. The period analyzed comprised the years 2013 to 2023, with the purpose of describing the temporal distribution and epidemiological profile of laboratory-confirmed cases in the country.

For the analysis, the following variables were selected: region of notification, categorized as North, Northeast, Southeast, South, and Midwest; year of notification, covering the period from 2013 to 2023; sex, classified as male and female; route of transmission; age group, ranging from 0 to 80 years or older; and number of laboratory-confirmed cases. The variable referring to the investigation of acute Chagas disease was also considered, according to the information available in the system. The selection of these variables was based on their relevance for the characterization of the epidemiological behavior of the disease in the national territory, allowing the identification of patterns of occurrence according to geographic distribution, demographic profile, and frequency of records throughout the analyzed time series.

The data were organized in tables and submitted to analysis by descriptive statistics, with calculation of the absolute and relative frequencies of the variables studied. From this approach, it was possible to describe the distribution of confirmed cases of acute Chagas disease in Brazil, contributing to the understanding of the epidemiological profile of the disease in the period investigated.

As this was a study based on secondary data, in the public domain and without nominal identification of the individuals, there was no direct contact with the participants.

3 RESULTS AND DISCUSSION

Between 2013 and 2023, 3,389 cases of acute Chagas disease were reported in Brazil, of which 95.4% (3,235/3,389) occurred in the North Region. The Northeast stood out, with 3.3% (113/3,389), Southeast, with 0.5% (17/3,389), South, with 0.4% (12/3,389), and Central-West, with 0.03% (1/3,389) (Table 1).

Table 1

Distribution of confirmed cases of acute Chagas disease reported in Brazil through SINAN, according to the region of notification, in the period from 2013 to 2023

Regions of Brazil	Number of reported cases (%)
North	3.235 (95,4)
Northeast	113 (3,3)
Southeast	17 (0,5)
South	12 (0,4)
Midwest	1 (0,03)
Total cases	**3.389**

The results show a strong concentration of cases of acute Chagas disease in the North Region, responsible for almost all notifications registered in the country in the period analyzed. This finding reinforces the permanence of this region as the main area of occurrence of the acute phase of the disease in Brazil, which may be related to local epidemiological characteristics, marked by the greater interface between human populations, vectors, and wild reservoirs, in addition to the occurrence of outbreaks associated, mainly, with oral transmission (Magalhães et al., 2021).

On the other hand, the other regions presented very low frequencies. The Northeast accounted for only 3.3% of the cases, while the Southeast, South and Midwest recorded percentages below 1%. These results suggest differences in the dynamics of disease transmission between Brazilian regions, possibly due to the lower occurrence of acute outbreaks outside the North Region and the historical impact of vector control measures, as well as blood and organ screening in different areas of the country (Arias et al., 2022). Even so, this distribution should be interpreted with caution, considering the possibility of underdiagnosis and underreporting, since the acute phase of the disease may present nonspecific signs or even go unnoticed clinically (Santos et al., 2020; Schijman et al., 2022).

Most cases occurred in males, who accounted for 53.8% (1,823/3,389) of the notifications. This predominance was also observed in a temporal study conducted with data on acute Chagas disease in Brazil between 2001 and 2018. This pattern may be related to greater male occupational exposure in rural and extractive activities, which favor permanence in field and forest areas and, consequently, increase contact with natural ecotopes of infected triatomines (Santos et al., 2020). This trend seems even more evident in the North Region, where the vast majority of cases in the country were concentrated. Studies carried out in the Brazilian Amazon have also identified a higher occurrence of the infection in men, especially young adults and those living in rural areas, possibly due to work activities linked to extractivism and more frequent contact with wild environments (Madeira et al., 2021).

The main route of infection was oral, corresponding to 84.4% (2,861/3,389) of the cases. This finding reinforces the central role of oral transmission in the recent epidemiology of acute Chagas disease in Brazil, especially through outbreaks associated with the consumption of artisanal foods and beverages contaminated by infected triatomines or their waste. López-García and Gilabert (2023) observed that the foods most frequently implicated in these episodes were homemade fruit juices, açaí (*Euterpe oleracea*), and sugarcane. In the Brazilian context, this pattern is particularly evident in the Amazon region, where outbreaks have been linked to the consumption of palm fruit juices likely to be contaminated (Sousa et al., 2023). In addition, the occurrence of this mechanism outside the Amazon demonstrates that oral transmission is not restricted to this region, as evidenced in Bahia, where an epidemiological investigation associated a familial outbreak with the ingestion of fresh acerola or acerola juice contaminated by *T. cruzi* (Ribeiro Jr. et al., 2025).

The most affected age group was 20 to 39 years, which concentrated 34% (1,153/3,389) of the cases, followed by the 40 to 59 age group, with 25% (845/3,389), and 15 to 19 years, with 9% (303/3,389). These findings show the predominance of acute Chagas disease in individuals of economically active age. This profile is consistent with recent literature, which also describes a higher frequency of cases among young adults, especially in regions of greater endemicity (Rocha et al., 2023; Dantas; Moura, 2025; Madeira et al., 2021). The greater involvement of individuals aged 20 to 39 years may be associated with insertion in rural and extractive activities, which favor greater exposure to vectors and environmental contexts of disease transmission. In addition, the significant participation of the 40 to 59 age group suggests that the accumulated time of exposure may also contribute to this age pattern (Madeira et al., 2021; Dantas; Moura, 2025).

4 CONCLUSION

Thus, it is observed that the acute form of Chagas disease remains a relevant Public Health problem in Brazil, with a significant number of cases registered between 2013 and 2023, especially in the North Region, responsible for the vast majority of notifications. There was also a predominance of cases in men of economically active age, while the oral route stood out as the main mechanism of infection in the period analyzed.

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