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Impactos da pandemia de COVID-19 na epidemiologia da Leishmaniose Tegumentar Americana no Brasil

Impactos de la pandemia de COVID-19 en la epidemiología de Leishmaniasis Cutánea Difusa en Brasil

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REVisa

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RESUMO

Objetivo: Analisar a incidência da Leishmaniose Tegumentar Americana (LTA) antes e durante a pandemia do COVID-19 entre regiões do Brasil. **Métodos:** Estudo ecológico realizado com dados do Sistema de Agravos de Notificação (SINAN). Investigou-se casos de LTA no Brasil, em 2017-2019 e 2020-2022. Calculou-se as proporções e frequências dos casos por região e períodos analisados, comparando a distribuição e evolução dos registros. **Resultados:** Dos 73.604 casos confirmados, ocorreu uma redução de 8,2% entre os dois períodos. As regiões Norte e Nordeste, respectivamente, obtiveram os maiores números de notificações em ambos períodos, com aumento na incidência da doença. Por outro lado, as demais regiões apresentaram diminuições durante a pandemia. **Conclusão:** Houve uma redução de casos notificados, com evidentes disparidades regionais, ainda mais intensificadas na era da COVID-19. A pesquisa reforça a importância de fortalecer os sistemas de vigilância, para que haja a continuidade do enfrentamento de doenças negligenciadas como a LTA.

Palavras-chave: Leishmaniose Tegumentar Difusa; Leishmaniose Cutânea; COVID-19.

ABSTRACT

Objective: To analyze the incidence of Leishmaniasis Diffuse Cutaneous (LDC) before and during the COVID-19 pandemic in Brazilian regions. **Methods:** Ecological study conducted using data from the Notifiable Diseases System (SINAN). LDC cases in Brazil were investigated in the years 2017-2019 and 2020-2022. The proportions and frequencies of cases were calculated by region and analyzed periods, comparing the distribution and evolution of records. **Results:** Of the 73,604 confirmed cases, there was an 8.2% reduction between the two periods. The North and Northeast regions, respectively, had the highest numbers of cases in both periods, with an increase in disease incidence. In contrast, the other regions had decreases during the pandemic. **Conclusion:** There was a reduction in reported cases, with evident regional disparities, even more intensified in the COVID-19 era. The research reinforces the importance of strengthening surveillance systems to continue tackling neglected diseases like ACL.

Keywords: Leishmaniasis Diffuse Cutaneous; Leishmaniasis, Cutaneous; COVID-19.

RESUMEN

Objetivo: Analizar la incidencia de la Leishmaniasis Cutánea (LC) antes y durante la pandemia de COVID-19 entre las regiones de Brasil. **Métodos:** Estudio ecológico realizado con datos del Sistema de Información de Agravamientos de Notificación (SINAN). Se investigaron casos de LC en Brasil en los períodos 2017-2019 y 2020-2022. Se calcularon las proporciones y frecuencias de los casos por región y períodos analizados, comparando la distribución y evolución de los registros. **Resultados:** De los 73.604 casos confirmados, se observó una reducción del 8,2% entre los dos períodos. Las regiones Norte y Nordeste, respectivamente, registraron los mayores números de casos en ambos períodos, con un aumento en la incidencia de la enfermedad. Por otro lado, las demás regiones presentaron disminuciones durante la pandemia. **Conclusión:** Hubo una reducción de casos notificados, con evidentes disparidades regionales, aún más acentuadas en la era de la COVID-19. La investigación refuerza la importancia de fortalecer los sistemas de vigilancia, para garantizar la continuidad en el enfrentamiento de enfermedades desatendidas como la LTA.

Descriptores: Leishmaniasis Cutánea Difusa; Leishmaniasis Cutánea; COVID-19.

ORIGINAL

Introduction

Leishmaniasis is a complex of diseases caused by protozoa of the genus *Leishmania*, transmitted by the bite of an infected sandfly, possessing a zoonotic pattern that involves various types of hosts, such as wild and domestic animals, in addition to humans.¹ Its most prevalent manifestation is in the form of American Tegumentary Leishmaniasis (ATL), which is limited in nature and generally self-resolving, but associated with disfiguring and stigmatizing lesions on the individual's skin. In Brazil, it is estimated that 30 thousand new cases of ATL are reported annually, with an incidence rate of 18.5 cases per 100,000 inhabitants.¹⁻²

The main strategies for controlling tegumentary leishmaniasis in Brazil are the early diagnosis and adequate treatment of human cases, that is, measures directly related to the knowledge of neglected diseases, in addition to the integrality between primary and secondary care and epidemiological health surveillance. Given this complexity of diagnosis, treatment, and control, ATL is part of the group of neglected diseases, ranking fourth in morbidity among tropical diseases.^{1,3}

The COVID-19 pandemic led to the implementation of changes in health services, causing primary and secondary care units to reduce non-urgent care. These actions, together with social lockdowns and isolation, represented a logistical challenge for health surveillance, with an impact on the under-detection and underreporting of other infectious diseases, such as ATL, reflecting a delay in its timely diagnosis and, consequently, mainly in vulnerable populations.³⁻⁴

Objective

The present study aims to analyze the incidence of Tegumentary Leishmaniasis before and during the COVID-19 pandemic among the different regions of Brazil.

Methodology

An epidemiological, observational, ecological study, the study was carried out in Brazil, covering the five macro-regions, between the periods of 2017–2019 and 2020–2022, allowing the analysis of the incidence of American Tegumentary Leishmaniasis (ATL) before and during the COVID-19 pandemic. Data collection, analysis, and follow-up were carried out during November and December 2024.

The study population comprises a total of 73,604 confirmed cases of ATL reported in the Notifiable Diseases Information System (SINAN) in Brazil. The cases were selected based on the confirmation criteria available in the system, without specific validation studies of the codes or algorithms, assuming the standardization of the database.

The analyzed variables are the number of confirmed cases per year, region of notification (North, Northeast, Southeast, South, and Midwest) and clinical outcomes (cure, dropout, or death from ATL), with the system's standard classifications as established by the Ministry of Health. The data derived from the Notifiable Diseases Information System (SINAN), with public access made available by the Ministry of Health, whose records are standardized throughout the national territory. To reduce possible sources of bias, only confirmed cases of ATL based on SINAN's clinical, laboratory, and epidemiological criteria

were included. Access to the data was possible through public online consultation via SINAN records, with data cleaning methods that included checking for duplication and excluding cases with inconsistent or incomplete information.

The quantitative variables were analyzed using descriptive statistics to compare proportions, in which the categories established only the periods studied. The study did not perform linkage or pairing between databases.

Results

73,604 confirmed cases of ATL registered in SINAN between 2017 and 2022 were analyzed, based on the clinical, laboratory, and epidemiological criteria established by the Ministry of Health. During the data cleaning process, duplicate, incomplete, or inconsistent records were excluded, resulting in a robust database, with no missing information in the analyzed variables.

Between 2017 and 2019, Brazil registered 38,379 cases of ATL, while in the period from 2020 to 2022, 35,225 cases were reported, which shows a **reduction of 8.2%**. Regarding the regional distribution, the **North** stood out as the main responsible for the largest concentration of cases, representing 50.20% and 51.33% of the records in the two periods, respectively. The Northeast, in turn, presented 20.65% of cases between 2017 and 2019 and 21.51% between 2020 and 2022. The Southeast contributed 14.15% in the first period and 14.37% in the second. The South and Midwest regions presented lower percentages, with the South having a reduction from 1.27% to 0.96%, while the Midwest decreased from 15.72% to 13.81%.

Discussion

The results of the present study demonstrated a slight overall reduction of 8.2% in the number of ATL cases in Brazil between the periods of 2017–2019 and 2020–2022, with distinct regional variations. This decrease, although discreet, points to the complexity of the relationship between COVID-19 and the transmission of ATL, which may be influenced by various factors, such as the indirect impact of the pandemic on health systems and changes in vector exposure behavior.

However, although the present study used a standardized national database, a limitation was the lack of a more detailed analysis of socioeconomic and environmental factors, such as deforestation, climate conditions, and extreme poverty, that could explain the regional variations in ATL. The difficulty of obtaining and deeply exploring complete data on these variables, especially in hard-to-reach areas, may have generated bias in the interpretation of the results, limiting the understanding of the underlying factors to the differences observed between the periods and regions.

When interpreting the results, it is observed that the slight reduction in the number of cases in Brazil during COVID-19 is consistent with the impact of social isolation measures, which reduced population mobility and, consequently, exposure to risk areas, along with the interaction between the population and the vector. This dynamic was previously pointed out as a possible indirect effect of the pandemic on vector-borne diseases.⁴

Furthermore, the decrease in the number of reported cases may also reflect difficulties in health services during this period, including limited access, system overload,

and the prioritization of resources for facing COVID-19, which negatively impacted the surveillance of neglected diseases such as ATL, thus contributing to the under-detection and underreporting of cases. Consequently, the discontinuity of educational campaigns and vector control, combined with the population's hesitation in seeking medical care due to fear of contagion, contributed to the reduction in records, especially in locations where underreporting was already a chronic problem.^{3,5}

Regarding regional variations, the persistence of high rates of ATL in the **North** and **Northeast** highlights the complexity in specific environmental contexts. These regions, which concentrated more than 50% and 20% of cases, respectively, in both analyzed periods, reflect conditions favorable to the vector with vast forest areas and vulnerable populations in rural zones. Previous studies indicate that, in addition to having difficulties in accessing health services due to long distances to the care unit, occupational exposure and the proximity of deforestation territories are determining factors in these regions.³

The **South**, **Southeast**, and **Midwest** regions presented more pronounced drops in reported cases, which may be related to different factors. More advanced urbanization and better health infrastructure in the South and Southeast may have reduced exposure to the vector and facilitated access to diagnosis and treatment, even during the pandemic. In contrast, in the Midwest, although it presented a drop in percentages, it is important to consider that the region encompasses areas with environmental characteristics similar to those of the North and Northeast, which reinforces the hypothesis that the decrease can be attributed, in part, to underreporting during the pandemic period.⁵

Final Considerations

It is concluded, therefore, that the reduction observed in the number of reported cases of American Tegumentary Leishmaniasis during the COVID-19 pandemic reinforces the complex interaction between epidemiological, structural, and social factors that influence the surveillance and control of this neglected disease. The regional disparities evidenced highlight the need for targeted strategies for the most affected areas, especially in the North and Northeast of Brazil. Furthermore, the findings reinforce the importance of strengthening health and epidemiological surveillance systems to minimize the impacts of health crises on the detection and management of ATL.

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