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VISCERAL LEISHMANIASIS IN BRAZIL FROM 2007 TO 2022: ECOLOGICAL TIME SERIES ASSESSMENT AND SPATIAL MAPPING OF EPIDEMIOLOGICAL AND OPERATIONAL INDICATORS

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Abstract

Visceral leishmaniasis (VL) is a neglected zoonotic disease caused by protozoa of the genus *Leishmania* that are transmitted to humans by sand flie (*Psychodidae* family) bites. If left untreated, VL can be fatal in approximately 90% of cases, with clinical manifestations including fever, hepatosplenomegaly, and weight loss. The disease is endemic in over 70 countries, with Brazil among the most affected nations. This study aims to describe the epidemiological profile of VL cases reported in Brazil from 2007 to 2022 using data from the National System for Notifiable Diseases (SINAN). We conducted an ecological time-series analysis, calculating incidence and case-fatality rates across different regions. The study also examined sociodemographic and clinical characteristics, including diagnostic criteria, HIV coinfection, and treatment outcomes. Trends were analyzed using linear regression models to determine annual percentage variations. The incidence rate of visceral leishmaniasis per 100,000 population over time, with a relatively stable trend until 2018, followed by a sharp decline from 2019 onwards. The lethality rate of VL, with a general increase until around 2018, followed by a sharp decline from 2019 onwards. The highest number of VL cases in Brazil (2000–2022) occurred in the central and northeastern regions. The Local Moran's I analysis identifies clusters of high and low incidence of visceral leishmaniasis in Brazil, with high-risk areas in central and northeastern states. Our findings provide a comprehensive assessment of VL in Brazil, highlighting regional disparities and contributing to improved surveillance and control strategies.

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