XVII INTERNATIONAL SYMPOSIUM ON
SCHISTOSOMIASIS
PERSPECTIVES ON SCHISTOSOMIASIS ELIMINATION
NOVEMBER 10–13TH 2024 | SALVADOR – BAHIA

Indicate the format in which you wish to present your work: ☐ Poster ☒ Oral Presentation

TITLE

SPATIAL AND SPATIOTEMPORAL ANALYSIS OF SCHISTOSOMIASIS MANSONI POSITIVITY IN ALAGOAS: A 10-YEAR RETROSPECTIVE

AUTHORS

Lima, F.L.S.*[1]; Silva, W.S.[1]; Torres. A.H.[1]; Oliveira, M.P.[1]; Vieira, N.R.S.[1]; Gomes, L.G.S.[1]; Lima, M.W.S.[1]; Nunes, L.K.S.[1]; Carvalho, M.M.V.[1]; Santos, E.D.[1]; Ramos, R.E.S.[1,2]; Bezerra, L.P.[1,3]; Santos, I.G.A.[1]

AFFILIATIONS

[1] Research Group on Human Parasitology and Malacology, State University of Alagoas, Santana do Ipanema, Alagoas, Brazil
[2] Center for Medical Sciences, Federal University of Pernambuco, Recife, Brazil
[3] Department of Parasitology, Instituto Aggeu Magalhães/ Fiocruz, Recife, Pernambuco, Brazil

ABSTRACT

Introduction: Schistosomiasis mansoni is an important waterborne disease in Brazil, closely associated with socioeconomic, structural, cultural, and political factors. Objective: To analyze the spatial and spatiotemporal distribution of positivity rates for schistosomiasis mansoni in Alagoas between 2012 and 2021. Methods: This is an ecological study with a spatiotemporal approach. Data were obtained through the Schistosomiasis Control Program Information System (SISPCE). To this end, we considered positivity rates for the disease by the municipality in Alagoas. We verified the existence of autocorrelation using the Global Moran Index (GMI) and identified municipalities presenting similar patterns through the Local Moran Index (LMI). Risk clusters were identified using Kulldorff's spatiotemporal scanning analysis. Results: Throughout the studied period, 73,325 positive cases of Schistosoma mansoni infection were recorded in the state. The positivity rate for the disease is distributed heterogeneously across the endemic Health Regions (HR) of the state, with the majority of positivity rates <5.0 (low endemicity). Our analysis also identified 20 municipalities in the state with average endemicity (rates between 5.1 and 15.0). Only 1 municipality (Branquinha) had a positivity rate higher than 15.0 (high endemicity). Furthermore, we identified positive spatial autocorrelation (IMG = 0.52308; p = 0.001). A total of 16 municipalities presented a Q1 (high/high) pattern, high risk for the disease, located in the 1st, 2nd, 3rd, 4th, and 6th HR. Another 30 municipalities located in the 7th, 8th, 9th, and 10th HR presented standard Q2 (low/low), low-risk areas, it is noteworthy that the 9th and 10th HR are not endemic for the disease. The spatiotemporal scanning analysis revealed 2 high-risk clusters, with the primary cluster being present in all endemic HR in the state, with a relative risk of 11.06 (p <0.001) and likelihood ratio of 46895.10. Conclusion: These data demonstrated that the areas at risk for schistosomiasis are mainly concentrated in municipalities in the 3rd, 4th, and 6th HR of the state. Furthermore, most municipalities have low endemicity, which may indicate that the state has taken promising steps in controlling the disease. However, the profile of serious infections within these municipalities needs to be better elucidated, to demonstrate that the state has reduced the number of serious infections to less than 1%, as the WHO aims to eliminate schistosomiasis as a public health problem.

KEYWORDS

Schistosoma mansoni; Spatial Distribution; Neglected Tropical Disease

FINANCIAL SUPPORT