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

TITLE

MOLECULAR SCREENING OF SCHISTOSOMA MANSONI INFECTION IN ENDEMIC AREA OF THE STATE OF PARÁ, AMAZON, BRAZIL

AUTHORS

Rodrigues, E.L.C.[2] ; Monteiro, W.W.S.[2]; Ferreira, P.M.S.*[1]; Souza, D.A.M.[1]; Viana, G.M.R.[1]; Prestes, S.P.C.[3]; Enk, M.J.[1]; Nogueira, J.F.C.[1]

AFFILIATIONS

[1] Evandro Chagas Institute, Ministry of Health, Ananindeua-PA, Brazil
[2] State University of Pará, Belém-PA, Brazil
[3] Municipal Health Department, Belém City Hall, Belém, PA

ABSTRACT

Currently, schistosomiasis remains endemic in several regions of Brazil and is considered a serious local public health problem. In the city of Belém, capital of the state of Pará, there are areas of active transmission in approximately 04 neighborhoods of the municipality, among them the neighborhood of Terra-Firme, with the presence of the vector snail. The Kato-Katz technique, considered the reference standard for the diagnosis of schistosomiasis, is an extremely limited method considering areas of low parasite load. It is necessary to develop new diagnostic tools to better support strategies and actions to control this disease. In this sense, the objective of this study was to track at the molecular level the presence of Schistosoma mansoni infection in residents of an endemic area located in Belém, capital of the state of Pará, and to evaluate the applicability of this tool for the surveillance and control of schistosomiasis. This longitudinal study was carried out in the city of Belém, in the Terra-Firme neighborhood, where 200 stool samples were collected from patients to determine the occurrence of S. mansoni infection using the qPCR and Kato-Katz (KK) methods, examining up to 12 slides (KK 12L). 60 and 120 days after the first diagnosis, the same infection detection methodology was applied only to individuals who tested positive for qPCR and negative for KK, to evaluate the presence of parasite eggs in the stool. It was found that the age of the participants ranged from 2 to 88 years, with an average of 36 years, with little difference between the genders that participated in the study, with 52.5% being female (105/200) and 47.5% being male (95/200). The positivity rate for S. mansoni by the KK method ranged from 5% (10/200) to 10% (20/200), depending on the number of slides used, while the molecular method (qPCR) showed a much higher positivity rate, 42.5% (85/200), P less than 0,05. The age group most affected was 10 to 20 years, with a rate of 10.5% for qPCR and 3.5% for KK 12L. The male gender presented the highest number of positives, 24.5% (qPCR) and 6.5% by KK 12L. The intensity of infection in this area was low, with an average parasite load of 20 eggs per gram of feces. The qPCR evaluation revealed an average Ct of 32,66. After monitoring the 65 patients who tested positive only for qPCR, 10 tested positive for the KK method 60 and 120 days after the first diagnosis, with a rate of 15.4% and an average parasite load of 6 to 9 opg. The results revealed a high rate of schistosomiasis in the Terra-Firme neighborhood, in the municipality of Belém, capital of the state of Pará, and may contribute to strengthening surveillance and control activities for this disease in the municipality, since real-time PCR has been shown to be a tool capable of improving the identification of S. mansoni carriers, contributing to increasing the effectiveness of the program to control and eliminate this disease in endemic areas of the Brazilian Amazon.

KEYWORDS

Schistosoma mansoni; Schistosomiasis; Molecular Diagnosis; Amazon-Brazil

FINANCIAL SUPPORT