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TITLE

REVISITING THE SCHISTOSOMIASIS FOCI IN THE TOUROS REGION, RIO GRANDE DO NORTE, BRAZIL: A RETROSPECTIVE ANALYSIS.

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ABSTRACT

INTRODUCTION: In 1976, the Special Schistosomiasis Control Program (PECE/MS) chose the municipality of Touros, RN, to conduct an epidemiological survey in a perennial lagoon whose waters drain into the sea through the Jiqui River in a system of streams, ditches, and marshes. The local population used the lagoon, where *Biomphalaria glabrata* (BG) was recorded, for bathing, leisure, and fishing. In that survey, 4,620 BG specimens were collected, with *Schistosoma mansoni* (SM) natural infection ranging from 1.2% to 3.3%. The positivity of SM in the population examined (88.3%), a single Kato-Katz (KK) stool sample, was 56.4%. Collective treatment covered 93.4% of the population; after 14 months the prevalence was 20.6%.

OBJECTIVES: (1) To revisit the snail sites of Touros, Pureza, and Rio do Fogo, endemic municipalities; (2) to analyse the parasitological and malacological data from PCE/SES-RN for 2016-2023.

METHODS: In May 2024, a malacological survey was carried out in the breeding sites regularly monitored by the PCE in the region. The specific identification of the collected snails and the natural infection by SM was performed at the Schistosomiasis Reference Laboratory and Service of the IAM using crushing and SmITS-qPCR techniques (10% of the collected sample). Secondary data from the malacological and stool surveys of the local PCE were analysed and spatialized in thematic maps.

RESULTS: In the period 2016-2023, the PCE/SSRN recorded the following percentages of population examined (pex) and positivity (pos) for SM: Touros, 70.1% (pex) and 4.2% (pos); Rio do Fogo, 3.8% (pex) and 18% (pos); and Pureza, 18.7% (pex) and 3% (pos). During the same period, 42 BG specimens were collected in Touros and 1,071 in Pureza, with one (2.3%) and 22 (2.1%) infected snails detected, respectively. The survey carried out in 2024 confirmed *B. glabrata* as the local intermediate host species and collected 87, 1,123, and 237 specimens in Touros, Pureza, and Rio do Fogo, respectively. The crushing and SmITS-qPCR techniques did not reveal naturally infected specimens. **CONCLUSION:** Natural infection of BG specimens in the localities tended to be low (1-3%), even when human infection was high. This finding, combined with the difficulty of the crushing technique in detecting larval stages of SM in recent infections and the low percentage (10%) of snails subjected to the SmITS-qPCR technique, may have contributed to the non-detection of natural infection in the snails collected in 2024. Despite this, recent data show that SM infection persists, affecting 3% to 5.8% of the population. Rio do Fogo surprises with 18% of human cases registered from only 3.8% of the population. The lack of sanitation and residents' constant use of the lagoon, combined with past and recent epidemiological data, show the need for permanent monitoring of the epidemiological situation in the locations evaluated.

KEYWORDS

Schistosomiasis; *Biomphalaria glabrata*; Rio Grande do Norte, Brazil

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