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Prevalence of schistosomiasis in the city of Limoeiro Agreste de Pernambuco

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Prevalence of schistosomiasis in the city of Limoeiro Agreste de Pernambuco

Prevalencia de esquistosomiasis en la ciudad de Limoeiro Agreste de Pernambuco

Prevalência de esquistossomose na cidade de Limoeiro Agreste de Pernambuco

ABSTRACT

Objective: To analyze the prevalence of schistosomiasis in the municipality of Limoeiro in the countryside of Pernambuco between 2014 and 2017. **Method:** To obtain the data, we used the coproscopic surveys of the Schistosomiasis Control Program (PCE) provided by the Municipal Health Secretary of Limoeiro - FOOT. **Results:** An incidence coefficient of 2.8% was found in the period from 2014 to 2017 of infection by *Schistosoma mansoni* in the city of Limoeiro in Agreste Pernambuco. The characterization of schistosomiasis patients in this region is a population aged between 18 and 65 years old, 75% male and 25% female. The survey reports that 20% of carriers are from urban areas and 80% are located in rural areas and only 50% of those infected have sought treatment. **Conclusion:** It is hoped that the results of this study will provide training for health professionals in the development of strategies, planning and execution of measures aimed at reducing the incidence of schistosomiasis in the region.

DESCRIPTORS: Epidemiology; Schistosomiasis Control Program, Schistosomiasis.

RESUMEN

Objetivo: Analizar la prevalencia de esquistosomiasis en el municipio de Limoeiro en el campo de Pernambuco entre 2014 y 2017. **Método:** Para la obtención de los datos se utilizaron las encuestas coproscópicas del Programa de Control de Esquistosomiasis (PCE) provistas por la Secretaría Municipal de Salud de Limoeiro - PIE. **Resultados:** Se encontró un coeficiente de incidencia de 2.8% en el período de 2014 a 2017 de infección por *Schistosoma mansoni* en la ciudad de Limoeiro en Agreste Pernambuco. La caracterización de los pacientes con esquistosomiasis en esta región es una población de entre 18 y 65 años, 75% hombres y 25% mujeres. La encuesta informa que el 20% de los portadores son de áreas urbanas y el 80% se encuentran en áreas rurales y solo el 50% de los infectados han buscado tratamiento. **Conclusión:** Se espera que los resultados de este estudio brinden capacitación a los profesionales de la salud en el desarrollo de estrategias, planificación y ejecución de medidas encaminadas a reducir la incidencia de esquistosomiasis en la región.

DESCRIPTORES: Epidemiología; Programa de control de la esquistosomiasis (PCE), Esquistosomiasis.

RESUMO

Objetivo: Analisar a prevalência de esquistossomose no município de Limoeiro no agreste de Pernambuco entre 2014 a 2017. **Método:** Para obtenção dos dados utilizou-se os inquéritos coproscópicos do Programa de Controle da Esquistossomose (PCE) disponibilizado pela Secretaria Municipal de Saúde de Limoeiro - PE. **Resultados:** Constatou-se um coeficiente de incidência de 2,8% no período de 2014 a 2017 de infecção por *Schistosoma mansoni* na cidade de Limoeiro no Agreste pernambucano. A caracterização dos portadores da esquistossomose nessa região trata-se de uma população com faixa etária de 18 a 65 anos, sendo 75% do sexo masculino e 25% de mulheres. A pesquisa relata que 20% dos portadores são de áreas urbanas e 80% estão localizado na zona rural e somente 50% dos infectados procuraram tratamento. **Conclusão:** Espera-se que os resultados deste estudo proporcione capacitação dos profissionais de saúde no desenvolvimento de estratégias, planejamento e execução das medidas que visem à redução na incidência da esquistossomose na região.

DESCRITORES: Epidemiologia; Programa de Controle da Esquistossomose, Esquistossomose.

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INTRODUCTION

Schistosomiasis *mansoni* is a waterborne parasitosis, caused by the trematode *Schistosoma mansoni*, which has in its biological cycle the involvement of snails of the genus *Biomphalaria*, which are the only intermediate hosts, and has man as the definitive host. This disease is popularly known as "snail disease" and/or "water belly", which courses with an acute or chronic condition, often with few symptoms or asymptomatic, but can also manifest in more severe forms, with an outcome of the death of the host.¹

According to reports by the World Health Organization (WHO), this parasitosis belongs to the group of neglected tropical diseases, with almost 240 million people worldwide in need of treatment.² Its occurrence is reported in 76 countries, which are located in the Middle East, South America, Southwest Asia and, particularly, in Africa, where it has a wide spread.³

In the Americas, Brazil is the most affected country, with about 1,5 million people infected with *Schistosoma mansoni* and more than 25 million living in places with high risk of infection,⁴ and northeastern Brazil is an appropriate location for the disease and for its intermediate host, as in addition to the poverty rate, the natural conditions necessary for its habitat are observed.⁵

The state of Pernambuco is still considered the Federated Unit of Brazil with the highest degree of endemicity for schistosomiasis, presenting, in 2015,

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a positivity of 3,0% among the 242.419 people examined, and an average of 181 deaths per year in the period 2005 to 2014, demonstrating, in the same period, the highest mortality rate when compared to the Northeast region, and the country.⁶ In addition, schistosomiasis generates high direct costs to public health, including: diagnosis, treatment of complications, transport and home care, and indirect costs such as: sick leave and premature death.⁷

Among the programs to combat schistosomiasis, we highlight the actions of the Schistosomiasis Control Program (PCE - Programa de Controle da Esquistossomose), which replaced the Special Schistosomiasis Control Program (PECE - Programa Especial de Controle da Esquistossomose) from 1980 (Ministry of Health, 2009), after the PCE there was a decentralization of actions surveillance, increasing the participation of municipalities in schistosomiasis control actions under the responsibility of municipal managers through Primary Care.⁸

Among the main actions carried out by the PCE at the municipal level, census coproscopic surveys, treatment of the infected, environmental sanitation measures, health education, epidemiological surveillance and annual feeding of the PCE Information System (SISPCE - Sistema de Informação do PCE) stand out. Considering the magnitude of schistosomiasis as a public health problem and the lack of studies that address the prevalence of schistosomiasis in the Agreste region of Pernambuco. This work aims

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to analyze the prevalence of the population infected with schistosomiasis in the municipality of Limoeiro in the rural region of Pernambuco from 2014 to 2017 through the actions of the Schistosomiasis Control Program.

METHOD

This is a descriptive epidemiological study, based on secondary data, conducted in the city of Limoeiro, located in the Agreste region of Pernambuco (PE), with an estimated population of 56,140 inhabitants, an area of 273.739 km², inserted in two hydrographic basins: Rio Capibaribe Basin and Rio Goiana Basin.⁹

The reports of the Schistosomiasis Control Program made available by the Municipal Health Department of Limoeiro - PE, from 2014 to 2017, were

The coproscopic surveys of the Schistosomiasis Control Program (PCE) were obtained through the parasitology of feces, using the Kato-Katz method.

analyzed, with a total of 11,418 exams performed through the ESF Family Health Strategy Units.

The coproscopic surveys of the Schistosomiasis Control Program (PCE) were obtained through the parasitology of feces, using the Kato-Katz method. The Kato-Katz method is a quantitative method, which quantifies the amount of eggs per gram of feces.¹⁰

Data collection took place from August to September 2019, by defining the following variables: sex, age (18 to 65 years), percentage (positive people and treatments) and locations.

For data analysis, these were organized in the Microsoft Office Excel program and then, the analysis of the absolute frequency and arithmetic mean of the data was conducted, which were structured in tables and graphs.

As for the ethical precepts, these were respected, and authorization from the Municipal Health Department was requested, with justification for the absence of the Informed Consent Form, obtaining a favorable opinion for conducting the study.

RESULTS

The surveys of the Schistosomiasis Control Program (PCE) for the period 2014 to 2017 are presented in the table in which the number of cases by Schistosoma mansoni can be verified.

The distribution between rural and urban areas was performed from the locations identified in the graph: ranch, village, hamlet, plantation, farm and neighborhoods (city).

DISCUSSION

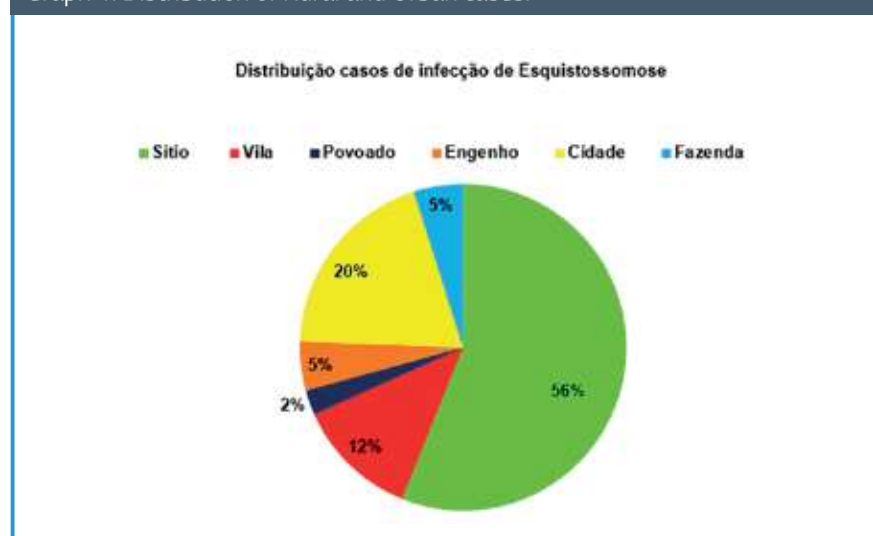
Schistosomiasis reaches the highest endemic index in the following States: Pernambuco, Bahia, Alagoas and Sergipe, and which are currently considered the main Federation Units with the highest prevalence and incidence of the disease.¹¹ The average prevalence of the disease in the city of Limoeiro in the

Table: Distribution of Schistosomiasis mansoni cases in the city of Limoeiro, Pernambuco, from 2014 to 2017.

PERIOD	TESTS	NO. OF PEOPLE WITH EGGS		TREATMENT (%)	
		M	F	M	F
2014	3.328	106	43	55	45
2015	3.358	28	7	-	-
2016	1.165	3	2	-	-
2017	3.567	107	29	45	55

Source: Coproscopic Surveys of the Schistosomiasis Control Program (PCE) 2014 – 2017.

Graph 1. Distribution of Rural and Urban cases.



period from 2014 to 2017, in a total of 11,418 exams, is 2,8%, being considered of low endemicity for a prevalence of less than 5%.¹²

The survey also reveals that 75% of those infected are male and 25% female (Table), showing that the probability was not equal for both sexes. The prevalence of schistosomiasis is related to behavioral aspects, in males, to the development of agriculture (Figure 1), in addition to day-to-day activities of rural men, such as

grass cutting, migration of sugarcane labor from endemic areas, fishing, consumption of water from dams and wells, extraction of sand in rivers are factors that determine a higher exposure of this kind.

The survey reports that 80% of those infected (Graphic) are located in ranches, villages, hamlets, plantations and farms, showing rural vulnerability to contamination. As for women, the research reports a common practice in their daily lives of using rivers and streams to

wash clothes, dishes and baths (Figure 2), these factors determine greater contact with the infective forms of the parasite.

Urban areas have 20% of those infected, evidencing the lack of basic sanitation, neighborhoods that are close to rivers and contacts with contaminated water during periods of flooding. Only 44,8% of the city has adequate sanitary sewage,⁹ the rest are provided with cess-pools, in large parts, not convenient sized and/or built, generating effluents that are generally connected to the networks of storm sewers that flow into the Capibaribe River.¹³ The lack of basic sanitation is one of the main factors in hyperendemic locations for schistosomiasis in the state of Pernambuco, contributing to the high prevalence of the disease in these locations.¹⁴

The Schistosomiasis Control Program (PCE) uses the Kato-Katz method, which has low diagnostic sensitivity in areas where the disease is of little severity, in which positive patients eliminate small amounts of eggs.^{15 16} However, it is known that it is not the best way to determine the prevalence of schistosomiasis in individuals with a light parasite load,¹⁷ thus, from an epidemiological point of view, they may be responsible for the maintenance of the disease focuses.¹⁸

The treatment of cases was carried out orally, in a single supervised dose (tablet), using the drug Praziquantel (600mg), 50mg/kg of weight for adults (>70 years old under medical guidelines) and 60mg/kg of weight for children up to 15 years. Recent evidence indicates that regular treatment with Praziquantel prevents severe forms but does not lead to elimination of the disease. Inevitable human contacts with the sources of infection lead to failure to control disease transmission.^{19 20} It was observed that in the period 2015 and 2016 there was no treatment and in 2014 and 2017 only 50% of those infected sought treatment, evidencing the lack of knowledge about the severity of the disease in the region.

Another way to prevent schistosomiasis is through education and health, for



Source: Authors' personal archive.



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the act of educating, with positive, real, concrete and effective actions, trying to be clear and precise,²¹ sharing knowledge, developing activities involving communities in the execution of control actions, as well as increasing their level of awareness, in order to bring the necessary empowerment to demand from the competent authorities the pertinent measures to solve the problem of schistosomiasis.⁶

When thinking about educational

actions, I would refer to the act of educating as positive and real concrete and effective actions, trying to be clear and precise without much bewilderment, avoiding clarifying doubts, which should be continuous and reciprocal.

CONCLUSION

The data analyzed from 2014 to 2017 characterize the patients with the disease

and the need to create strategies to cover the treatment, and thus fight the spread of the disease in addition to the increase in mortality.

It is expected that the results of this study will strengthen health care and provide training for health professionals in the development of strategies, planning and implementation of measures aimed at reducing the incidence of schistosomiasis in the region. ■

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