

Acute chagas disease: An experience report in the municipality of crateús

RESUMO | Objetivo: Relatar a experiência de analisar o perfil epidemiológico do paciente com doença de Chagas Aguda no município de Crateús-Ceará. Método: Trata-se de um relato de experiência. A visita técnica à secretaria de saúde foi em setembro de 2022. Foi analisada a ficha de notificação compulsória do paciente com diagnóstico de Doença de Chagas Aguda. Resultados: Foi identificado o perfil epidemiológico do paciente com diagnóstico com Doença de Chagas Aguda, sendo: sexo masculino, 42 anos, nascido na zona rural de Crateús – Ceará, raça ignorada, trabalhador volante da agricultura, chegou a unidade de saúde com suspeitas de sintomas agudos de doença de chagas de acordo com a ficha de notificação de agravos, feita no dia 02 de agosto de 2022. Conclusão: A Doença de Chagas Aguda é considerada uma doença negligenciada, uma vez que, demonstra a pobreza humana, apresentando um alto índice de morbimortalidade na região endêmica.

Descritores: Doença de Chagas; Epidemiologia; Doenças Negligenciadas.

ABSTRACT | Objective: To report the experience of analyzing the epidemiological profile of patients with Acute Chagas disease in the municipality of Crateús-Ceará. Method: This is an experience report. The technical visit to the health department was in September 2022. The compulsory notification form of the patient diagnosed with Acute Chagas Disease was analyzed. Results: The epidemiological profile of the patient diagnosed with Acute Chagas Disease was identified, being: male, 42 years old, born in the rural area of Crateús - Ceará, unknown race, agricultural worker, arrived at the health unit with suspicions of acute symptoms of Chagas disease according to the notification form of injuries, made on August 02, 2022. Conclusion: Acute Chagas disease is considered a neglected disease, since it demonstrates human poverty, presenting a high morbidity and mortality rate in the endemic region.

Keywords: Chagas disease; Epidemiology; Neglected Diseases.

RESUMEN | Objetivo: Relatar la experiencia del análisis del perfil epidemiológico de pacientes con enfermedad de Chagas Aguda en el municipio de Crateús-Ceará. Método: Este es un relato de experiencia. La visita técnica al departamento de salud fue en septiembre de 2022. Se analizó el formulario de notificación obligatoria del paciente diagnosticado con Enfermedad de Chagas Aguda. Resultados: Se identificó el perfil epidemiológico del paciente diagnosticado con Enfermedad de Chagas Aguda, siendo: masculino, 42 años, nacido en la zona rural de Crateús - Ceará, raza desconocida, trabajador agrícola, llegó a la unidad de salud con sospechas de síntomas agudos de la enfermedad de Chagas según formulario de notificación de lesiones, realizado el 02 de agosto de 2022. Conclusión: La enfermedad de Chagas aguda es considerada una enfermedad desatendida, ya que demuestra la pobreza humana, presentando una alta tasa de morbilidad y mortalidad en la región endémica.

Palabras claves: Enfermedad de Chagas; Epidemiología; Enfermedades Olvidadas.

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INTRODUÇÃO

Chagas disease (CD) is caused by the protozoan *Trypanosoma cruzi*, which parasitizes the blood and tissues of people and animals. It is transmitted by contact with the feces of vector insects, popularly known in Brazil as "barbeiros" (insects of the species: *Triatoma infestans*, *Rhodnius prolixus* and *Panstrongylus megistus*, among more than 300 species that can transmit *Trypanosoma cruzi*⁽¹⁾). There are also other forms of transmission, such as: oral, by eating food contaminated with the parasites; transmission from mother



to child or congenital form; by blood transfusions and organ transplants; and by accident from laboratories⁽²⁾.

Acute Chagas Disease (ACD) is generally asymptomatic (90% of cases) and can be characterized by high parasitemia, fever, malaise, Romanã sign (nodule in the eye region), inoculation chagoma (skin nodule), etc. It tends to be more severe in children and cause complications at this stage, such as myocarditis and meningoencephalitis, which can lead to death⁽³⁾. It presents in two clinical phases: the acute phase, usually asymptomatic, making diagnosis difficult, but it may present with headache, malaise, face edema or pomegranate sign, fever and hepatosplenomegaly, and the chronic phase, which may have cardiac complications such as cardiomegaly, causing heart failure, and digestive disorders such as megacolon and megaesophagus that can lead to death^(4,5).

In the acute phase of CD, the diagnosis is made by identifying the parasite through observation of fresh blood, smears, or thick blood from the infected patient. On the other hand, in the chronic phase, the diagnosis is based on serological tests such as ELISA, Hemagglutination and Indirect Immunofluorescence. CD treatment consists of the use of antiparasitics such as benznidazole, of first choice, and nifurtimox.⁽⁶⁾

Research claims that CD can cause dilated cardiomyopathy, which is one of the most feared complications of CD, as it modifies ventricular ejection and alters cardiac sinus rhythm. The guidelines for this disease are the use of the gold standard treatment for patients who progress to heart failure, which is heart transplantation, in which risk stratification is performed by the New York Heart Association (NYHA) However, there are individuals who cannot undergo the transplant, such as those with pulmonary hypertension, ABO incompatibility, severe psychiatric pathology, among others⁽⁷⁾.

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North region having the highest number of notifications in the country. The distribution of these cases across the

country was observed, in which the North region has an incidence rate of 8.84/100,000 ha, followed by the Northeast region with an incidence of 0.14/100,000 inhabitants, the Midwest region with 0.03/ 100,000 inhabitants, Southeast region with 0.003/100,000 ha, and in the South region there are no reported cases of the pathology⁽⁸⁾.

Brazil has an estimated 2.4 million cases of Chagas disease, with a predominance of chronic infections, most of which reside in large urban centers⁽⁹⁾ In 2010, the Ceará State Health Office (SESA-CE) team responsible for the Surveillance and Control of Chagas Disease in the state of Ceará started to articulate partnerships with active partnerships in the fight against this neglected disease. In 2015, the Chagas Disease Working Group (WG) was created, composed of representatives of entomological surveillance, epidemiological surveillance, Public Health Laboratory (LACEN), Ceará Hematology and Hemotherapy Center (HEMOCE) and (Laboratory for Research in Disease of Chagas from the Federal University of Ceará (LPDC - UFC)⁽¹⁾.

In view of the clinical and epidemiological characteristics, it is a disease that must be notified within 24 hours, justifying itself in the objectives of consolidating epidemiological surveillance aimed at collecting data to prevent the occurrence of new cases, identifying the form of transmission and measures of prevention. control, maintenance of control of forms of vector transmission, monitoring of the morbidity profile and incorporation of health and environmental surveillance into actions⁽²⁾.

Chagas disease is a neglected parasitic disease resulting from human interventions in the environment, highlighting the actions of destruction of the natural habitat of triatomines resulting in the displacement of these insects to live in wattle and daub houses⁽¹⁰⁾. Because it is a neglected disease, there was interest in not showing cases in the

acute form in recent years in the municipality of Crateús, Ceará. There are epidemiological data on cases in the chronic form, highlighting some municipalities in Ceará. In the years 2015 to 2019, it was observed that cities in the region of Sertão dos Inhamuns (Crateús and Tauá), Baixo Jaguaribe (Jaguaruana, Limoeiro do Norte and Russas) and Center-South (Icó) concentrated the highest number of infected people. The city of Fortaleza also stood out, with a high number of reactive results in the period, as in addition to concentrating the largest state population, it is a receiving center for migrants coming from endemic areas of the state and from other regions.

This work is justified by the appearance of a new case of ACD in August 2022, in the city of Crateús - Ceará, which was described according to a notification made in the Information System of Notifiable Diseases by the Epidemiological Surveillance Center of this County.

It checked the importance of the nurse's role in epidemiological surveillance, which has gained prominence in the last two years with the advent of the COVID-19 pandemic worldwide. The Epidemiological Surveillance being managed by the nurse is fundamental, as this professional has the competence to intervene together with his team in the identification of injuries and to act with preventive measures of neglected diseases.

To report the experience of analyzing the epidemiological profile of patients with Acute Chagas disease in the city of Crateús-Ceará.

METHOD

This is an experience report carried out in a private educational institution in the city of Crateús in the state of Ceará. The discipline of Epidemiology of the bachelor's degree in Nursing was developed in the second half of 2022

for 19 students in the fourth period. The discipline's teaching plan emphasizes the objective of favoring the understanding of the basic concepts of epidemiology and the epidemiological method in health and disease investigations, knowing the importance of health practice for the population.

Through the technical visit, it was possible to present the epidemiological surveillance service of the municipality and to know which neglected diseases were most prevalent in the city.

The city of Crateús is considered the 15th CRES that serves the cities of: Ararendá; Crateús; Independence; Ipaoranga; Ipueiras; Monsignor Tabosa; New Russians; New East; Poranga; Quiterianópolis and Tamboril.

The technical visit to the health department took place in September 2022, guided by the professor of the discipline of Epidemiology. At that moment, the students had access to the compulsory notification forms to identify the variables relevant to the injuries. As an inclusion criterion, he suggested analyzing a compulsory notification form referring to a neglected disease. For exclusion from the research, it could not register personal data of users; about chronic diseases and violence as a public health problem.

For the data collection technique, some compulsory notification forms of neglected diseases were analyzed. In the investigation, a file was identified about a user diagnosed with Acute Chagas Disease. The data were passed on by the Manager of the Epidemiological Surveillance Center of the city of Crateús-Ceará. The following variables were found in the form as gender, age group, house, occupational activity, and additional data on the disease (Presence of Intra-domicile Triatomine Traces; Handling/Contact of Material with *T. cruzi*; Possibility of oral transmission; Signs and Symptoms; Tests Performed; Mode/ Probable Site of Source of Infection).

RESULTS:

According to the Disease Information and Notification System, in August 2022, the Epidemiological Surveillance Center of the municipality of Crateús received news of a case of Acute Chagas Disease, according to the compulsory notification form filled out by the Basic Health Unit of a locality in that city.

At that first moment, the compulsory notification form of acute Chagas disease was passed on, in which it was identified and analyzed for application of the experience report, sharpening the students' curiosity about the disease. The choice was also described by the fact that it is a rare case in the city.

The epidemiological profile of the patient diagnosed with Acute Chagas Disease was identified as a male, 42 years old, born in the rural area of Crateús - Ceará, unknown race, agricultural worker, arrived at the health unit with suspected acute symptoms of Chagas disease according to the notification form of injuries, conducted on August 02, 2022.

The user's occupation and place of residence were also identified. The patient is a rural worker and lives in a locality with some houses still built along the lines of rammed earth, an environment prone to the emergence of transmission vectors. According to the notification form, the presence of traces of intra-household triatomines was not investigated, nor was it possible to determine a history of use of blood or blood products in the last 120 days. It was possible to identify ignored information in the notification form regarding the form of manipulation or contact of material with *T. cruzi* or the existence of serological control in the blood therapy unit.

In the third moment, the possibility of oral transmission was recorded on the form. At the time of notification, the patient was asymptomatic without fever, without swelling of the face or

limbs, without hepatomegaly, without signs of CHF or meningoencephalitis, negative for tachycardia or arrhythmias, chagomas caused by inoculation or signs of Romaña. However, they recorded a positive result for splenomegaly and asthenia. The results of the ELISA serology were positive for IgG confirmed by the laboratory test, ending the case as positive for Acute Chagas Disease with a living patient.

In the fourth moment, after the positive confirmation for the disease, the outcome was directed to the specific treatment for acute Chagas disease, which is done with Benznidazole for 60 days. Another important action was the measure of control of Triatomines by health professionals.

DISCUSSION

As the neglected diseases are public health problem, the experience report on Acute Chagas Disease is necessary to be disseminated as a way of identifying and presenting the characteristics of the disease. Mainly because it is a disease that is detected more frequently in the northern region of the country.

Regarding the sociodemographic profile presented in the results, it is like another study in which the largest number of Brazilians infected over the last few years was male individuals, of working age (40 to 59 years), brown and residents of North and Northeast regions of the country⁽¹¹⁾.

A survey carried out in four municipalities in the state of Rio Grande do Norte, in 2016, investigated 21 cases, of which 18 (85.7%) were confirmed for acute Chagas disease, 15 (83.3%) by laboratory criteria and three deaths (16.7%) by epidemiological clinician, two (9.5%) were discarded and one was lost. Of the confirmed cases, 15 were IgM reactive by IFI and Western blot techniques, in addition to reactive serology for IgG by ELISA, HAI and IFI techniques⁽¹²⁾. The case study of the

research must also, as a measure of confirmation, the results of the serology for ELISA that gave reagent for IgG con-



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firmated by the laboratory test.

The area of residence of the investigated case corroborates with seve-

ral epidemiological surveys in which the rural area was the place with the highest prevalence. In the survey carried out in the northern region⁽⁸⁾ most of the diagnoses originated in the rural environment (51.39%) as well as in the study⁽¹³⁾ which found a prevalence of 74.1% of contamination in the same area of residence .

The colonization of Chagas disease vectors is favored by the absence of plaster on the walls of homes located in endemic areas. In the study, it was verified that most of the houses either did not have plaster or were partially coated and, in addition, that families who were in a situation of poverty lived in houses that were not plastered and families above the poverty line in coated houses⁽¹⁴⁾.

The forms of CD transmission can be oral, vector, laboratory, or vertical transmission. Regarding transmission, the oral route was identified as the possible source of infection, as well as in a survey that found that 70% of the 1570 infected people also acquired Chagas disease through food⁽¹⁵⁾. In another study, a correlation was observed between the intake of sugarcane juice and the confirmation of 21 cases of Chagas disease in cities located in the northern region of the country⁽¹²⁾.

It is worth highlighting the important investigative role of Epidemiological Surveillance in identifying possible outbreaks of diseases such as ACD. When new cases appear, the investigative process that begins, culminating with the identification of the origin, enables security and planning of new prevention and combat actions and, finally, the treatment of people affected by diseases with potential spread.

One of the limitations of the study is related to some items filled with the Ignored code in the variables related to: race/color; schooling; history of use of blood or blood products in the last 120 days and probable site of infection (within 120 days). This situation suspends



the performance of the professional who filled out the form during the service.

From an investigation directed towards the collection of precise information, and the agility in the collection of this data, efficient means of action can be worked out in order to avoid the emergence of new cases of potentially dangerous diseases and guarantee the well-being of the population.

CONCLUSION

Through this study, it was possible to achieve the objective of analyzing the epidemiological profile of the pa-

tient with Acute Chagas disease in the municipality of Crateús-Ceará, caused in August 2022, in the city of Crateús-Ceará. This experience was very important to understand the cycle of the disease, forms of transmission and the most evident symptoms.

In the experience of reporting the case of acute Chagas disease, it was possible to show in the results obtained the possibility of tracing the epidemiological profile of the chagasic individual and trying to observe new cases that may arise in the region. It is important to emphasize the relationship between the form of oral contamination. Therefore, it is important to emphasize the need

to prevent the agent, given the difficulty in diagnosing affected individuals, who are predominantly asymptomatic.

Acute Chagas Disease is considered a neglected disease, since it demonstrates human poverty, presenting a high morbidity and mortality rate in the endemic region. This disease can cause damage to the cardiovascular system, although cardiac alterations were not frequent in the research patient, a continuous evaluation of the clinical-epidemiological dynamics of the disease in the region is necessary to establish preventive measures.

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