

Socio-demographic and epidemiological profile of acute chagas disease in an amazon municipality

Perfil sociodemográfico e epidemiológico da doença de chagas aguda em um município amazônico

Perfil socio demográfico y epidemiológico de la enfermedad aguda de chagas en un municipio amazónico

RESUMO

Objetivo: Identificar o perfil sóciodemográfico da Doença de Chagas Aguda (DCA) no município de Abaetetuba-Pará. Método: Estudo descritivo, analítico, transversal, com abordagem quantitativa, realizado em Abaetetuba-PA. Participaram 20 pacientes com DCA acompanhados em ambulatório municipal. Para a coleta de dados utilizou-se um formulário com perguntas abertas e fechadas. Resultados: Os pacientes estão na faixa etária entre 20 e 39 anos (40%), sexo masculino (50%), união estável (35%), solteiros (35%), baixa escolaridade (55%), não possuem renda (60%), declaram ter alguma religião com participação ativa (90%), católicos (50%), realizando tratamento (55%), não estavam tratando em decorrência de: reações adversas ao tratamento com benznidazol; ou que ainda iriam iniciar o tratamento; ou haviam concluído recentemente, e apenas um participante evoluiu com complicação. Conclusão: Evidenciou-se as vulnerabilidades dos participantes e permitiu a elaboração de estratégias preventivas, uma vez que a baixa renda e escolaridade estão relacionadas com a maior prevalência da DCA.

DESCRIPTORES: Doença de Chagas Aguda; Epidemiologia; Amazônia.

ABSTRACT

Objective: To identify the sociodemographic profile of Acute Chagas Disease (ACD) in the city of Abaetetuba-Pará. Method: Descriptive, analytical, cross-sectional study with a quantitative approach, carried out in Abaetetuba-PA. Twenty patients with ACD followed at a municipal clinic participated. For data collection, a form with open and closed questions was used. Results: Patients are aged between 20 and 39 years (40%), male (50%), in a stable relationship (35%), single (35%), low education (55%), have no income (60%) declared to have a religion with active participation (90%), Catholics (50%), undergoing treatment (55%), were not receiving treatment due to: adverse reactions to treatment with benznidazole; or that they were about to start treatment; or had recently completed, and only one participant evolved with complications. Conclusion: The vulnerabilities of the participants were highlighted and allowed the development of preventive strategies, since low income and education are related to the higher prevalence of ACD.

DESCRIPTORS: Acute Chagas Disease; Epidemiology; Amazon.

RESUMEN

Objetivo: Identificar el perfil sociodemográfico de la Enfermedad de Chagas Aguda (ECA) en la ciudad de Abaetetuba-Pará. Método: Estudio descriptivo, analítico, transversal con abordaje cuantitativo, realizado en Abaetetuba-PA. Participaron veinte pacientes con ECA seguidos en una clínica municipal. Para la recolección de datos se utilizó un formulario con preguntas abiertas y cerradas. Resultados: Los pacientes tienen entre 20 y 39 años (40%), hombres (50%), en relación estable (35%), solteros (35%), baja escolaridad (55%), no tienen ingresos (60%), declararon tener una religión con participación activa (90%), católicos (50%), en tratamiento (55%), no recibían tratamiento debido a: reacciones adversas al tratamiento con benznidazol; o que estaban a punto de comenzar el tratamiento; o había completado recientemente, y solo un participante evolucionó con complicaciones. Conclusión: Se resaltaron las vulnerabilidades de los participantes y se permitió el desarrollo de estrategias preventivas, ya que los bajos ingresos y la educación se relacionan con la mayor prevalencia de ECA.

DESCRIPTORES: Enfermedad de Chagas aguda; Epidemiología; Amazonas.

RECEIVED: 18/10/2021 APPROVED: 17/01/2022

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INTRODUCTION

Chagas disease (CD) is an anthroponosis caused by the flagellate protozoan, *Trypanosoma cruzi*, having as a vector the insect of the species of triatomine, popularly known as "barbeiro". When the disease occurs, two clinical phases are observed: an acute phase, which may or may not be identified, and may progress to a chronic phase if not treated with specific medication. In Brazil, due to domestic vector transmission that occurred in the past and interrupted today, chronic cases predominate. It is estimated that there are between two and three million infected individuals.¹

However, in recent years, the occurrence of Acute Chagas Disease (ACD) has been observed in different states, especially in the Legal Amazon region, mainly as a result of oral transmission, with the occurrence of outbreaks related to the ingestion of contaminated food (sugarcane juice, açaí, bacaba, among others) and isolated cases by extra domiciliary vector transmission.¹

In ACD, the parasite circulating in the bloodstream predominates, in expressive amounts. Having persistent fever as the most characteristic manifestation, initially high (38.5 to 39°C), with possible occasional afternoon peaks. Manifestations of febrile syndrome may persist for up to 12 weeks. This initial phase, even if untreated or diagnosed, can evolve with spontaneous disappearance of fever and most other clinical manifestations, progressing to the

chronic phase. In some cases, with a more severe clinical picture, it can progress to death.²

A person who has ingested food suspected of contamination by *T. cruzi* or visited an area of occurrence of triatomines and has a prolonged fever (over 7 days), accompanied by at least one of the following signs, is considered suspected of having ACD: face or limb edema, rash, adenomegaly, hepatomegaly, splenomegaly, acute heart disease (tachycardia, signs of heart failure), hemorrhagic manifestations, Romaña's sign or inoculation chagoma.³

The drug available for the specific treatment of CD is benznidazole, presented in the form of 100mg tablets. In the acute phase, treatment should be carried out in all cases and as soon as possible after diagnostic confirmation. It should be used in two or three daily doses orally, for 60 days, and the dose varies according to the age and weight of the patient.²

In the period from 2010 to 2017, Brazil had 1,866 confirmed cases of ACD, of which 1,102 were in the state of Pará, which is equivalent to 59.05% of cases. Of these, 348 cases (31.57%) were from the Health region of Tocantins and 181 cases belonged to the municipality of Abaetetuba, the municipality with the highest number of confirmed cases of the disease, that is,

16.42% of the cases in Pará and 52% of the confirmed cases in the regional health department of Tocantins. Observing the distribution of ACD cases for each

year analyzed, the highest occurrence occurred in 2016, with 282 confirmed cases (25.58%), which characterized that year as the year with the highest incidence of the disease. The year 2011 had the lowest incidence, with 24 confirmed cases (2.17%).⁴

Since 2012, CD has been an infectious condition (with an acute or chronic phase) and comprises the set of neglected diseases, classified as diseases associated with poverty and precarious living conditions and health inequities, according to the World Health Organization (WHO).⁵

Given this context, this research aimed to identify the sociodemographic profile of Acute Chagas Disease in the municipality of Abaetetuba-Pará.

METHOD

Research with a descriptive, analytical and cross-sectional design, with a quantitative approach, carried out in the municipality of Abaetetuba-PA, Brazil, belonging to the Tocantins health region, linked to the 6th Regional Health Center-SESPA, which integrates the Northeast Mesoregion of Pará.

Twenty patients with ACD who are being followed up at a municipal outpatient clinic participated in the research. For the inclusion criteria: Patients with ACD, being followed up at the municipal health service of Abaetetuba, of both sexes and aged from 12 years. For the exclusion criteria: Non-residents of the municipality of

Abaetetuba-PA, people with cognitive impairment that make it impossible to answer the interview questions.

For data collection, a form with open and closed questions was used, composed of: age, sex, education, marital status, religion, profession/occupation, personal income, treatment and complications of CD. It was decided to carry out the interview at home so that there would be no interference in the routine of the health service and so that the patient would have greater comfort to answer the questions.

For data analysis, the variables found were tabulated using Microsoft Excel 2010 to describe means, standard deviation and percentage values, as well as for the preparation of graphs and tables.

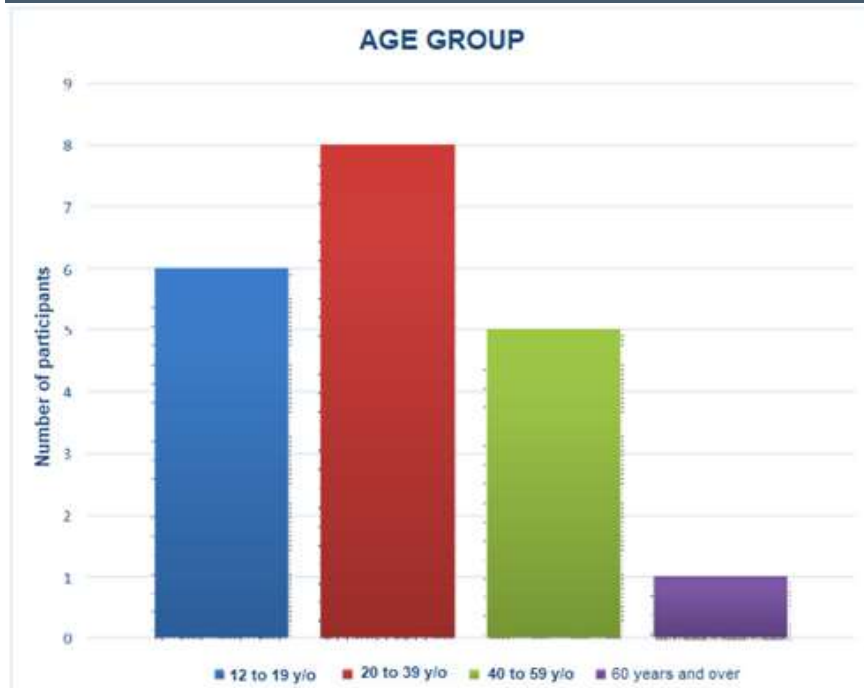
The research complied with Resolution No. 466/12 of the National Health Council, which regulates and regulates research involving human beings. The project was submitted to the Research Ethics Committee of the Undergraduate Nursing Course at the Universidade do Estado do Pará-UEPA, approved under protocol number 2.288.005, CAAE: 75435417.2.0000.5170 and also obtained approval from the Municipal Health Department.

RESULTS

The results indicate that the highest frequency of age was in the age group between 20 and 39 years (40%), with an average age of 33 years, with a minimum age of 27 years and a maximum of 38 years (Graph 1). Soon after, the age groups from 12 to 19 years old ($n=6$, 50% aged 18 or over) and from 40 to 59 years old ($n=5$), in which the average age for the former was 17 years, with a minimum age of 14 years and a maximum of 19 years, while in the latter, the average age was 48 years, with a minimum age of 40 years and a maximum of 59 years. In terms of economically active age groups, the study showed a predominance in the 20-39 and 40-59 age groups, with 13 participants (65%).

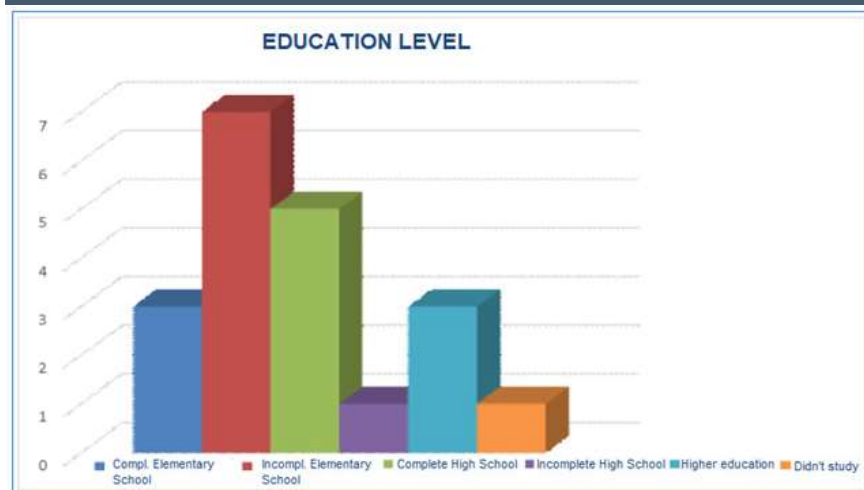
There was no gender predominance because of the 20 participants, 10 (50%)

Graph 1 - Distribution of patients with Acute Chagas Disease, according to age group, Abaetetuba/Pará – 2018.



Source: prepared by the author.

Graph 2 - Distribution of patients with Acute Chagas Disease, according to schooling, Abaetetuba/Pará – 2018.



Source: prepared by the author.

were male and 10 (50%) were female. Regarding marital status, it was observed that the majority live in a stable union (7; 35%) and single (7; 35%). With regard to education and income, the highest number of cases occurred in individuals who did not

study and with individuals with low education (11; 55%) with incomplete primary education and complete primary education (Graph 2).

It was found that 12 patients have no income (60%) and six have an income be-

low the minimum wage, in a total of 18 of the 20 participants, evidencing social vulnerability. Participants declare to have some religion with active participation (18; 90%), with emphasis on the Catholic religion (10; 50%), 35% Evangelicals, 10% without religion and 5% Spiritualists. As for the treatment of ACD, 60% (n=12) were undergoing treatment. The others reported that they were not being treated due to some factors, such as: adverse reactions to treatment with benznidazole; or who would still start treatment; or had recently completed. Regarding the appearance of complications due to ACD among the participants, only one participant (5%) developed a cardiac-type complication.

DISCUSSION

In this study, the age range variable had an average of 33 years, differing from the study by Vargas et al.,⁶ which showed an average age of 49 years, residents of rural areas and consumers of sugarcane juice.

The average age found in this study can be explained by the higher prevalence of ACD in the state of Pará, with oral transmission predominating, the causes related to the consumption of açai juice, considered an essential food in the diet of the population of the North Region and much appreciated in other Brazilian states and in other countries.⁷ The epidemiology of the disease in Abaetetuba-PA is significantly associated with the food culture of açai produced on the islands with the occurrence of acute cases by oral transmission in the urban area.⁸

As for the gender variable, in this research there was no predominance. However, in a study on the profile of patients with ACD in the state of Acre, followed up in an outpatient clinic of specialized services, showed that the predominance in relation to males (72.09%), related to a higher transmission rate by the barber sting, also highlighting the predominance of men due to work in the countryside and rural areas.⁹

However, the results in relation to gender corroborate studies,¹⁰ in which he performed a spatio-temporal analysis of CD

in the city of Barcarena-Pará, and showed that there was no statistical significance in relation to sex, also related to the high prevalence of CD in the state of Pará, affecting equally regardless of sex.

Regarding the marital status of the participants, singles predominated, but without statistical significance. As this result is contrary to the research by Andrade¹¹, which traced the epidemiological profile of chagasic patients in a referral hospital in Belém-PA, and highlighted that 57% were married, followed by 43% single.

Studies carried out in Minas Gerais and Pará corroborate the present study, with a predominance of incomplete elementary education (38%).¹² Thus, it is shown that ACD predominantly affects individuals with low education. Both in the Amazon and Southeast contexts, schooling is similar.¹¹

As for income, it was found that 60% corresponded to one minimum wage. In agreement, a survey carried out in Ceará, with 89 patients with Chagas disease, treated at a pharmaceutical care service, showed that the income of a minimum wage prevailed in 70%, and relating low schooling with low income, shows that these individuals have little access to health promotion and education practices. Therefore, monitoring patients in specialized services is justified in order to offer a better quality of life, through adherence to treatment and preventive practices for the occurrence of new cases in that community.¹³

Regarding the religion of the participants, 50% reported being Catholic. In a study carried out in Belém-PA, it showed that the predominance in relation to religion was 57.14% of Evangelicals and 42.85% of Catholics, contrary to the results of this study.⁹ Belief in a religion and in religious activities is a way to stay active and hopeful. Thus, reflecting on the quality of life in the psychosocial issue, since these activities minimize the risk of isolation and promote social interaction.¹⁴

It was approached in relation to the treatment, in which 60% reported being in treatment. A study that evaluated 19 patients with ACD in Fortaleza-CE found

that 55% did not adhere to treatment with benznidazole.¹⁵

According to the Clinical Protocol and Therapeutic Guidelines for Chagas Disease of the Ministry of Health 16, benznidazole is the most commonly used drug. However, it has a 53% rate of adverse events: paresthesias (10.3%), arthralgias (8.1%), gastrointestinal intolerance (13.3%), dermatological events such as alopecia (0.9%), dermatitis and skin rash (30-44%), commonly without interrupting treatment. However, some symptoms, such as paresthesias (peripheral polyneuropathy), represent a high impact on functionality and quality of life, persisting for months after stopping treatment. More serious complications, such as bone marrow depression with neutropenia, can also occur, so a blood count every three weeks is recommended for monitoring.¹⁶

It appears that the epidemiological situation of ACD is similar to other endemic diseases in the Amazon region, such as Visceral Leishmaniasis, which usually affects individuals with low purchasing power. This social particularity can interfere with the health status of the population due to the precarious sanitary conditions they live in, in which infections and malnutrition aggravated by diseases are factors of poor prognosis.¹⁷

In this study, regarding the presence of complications related to ACD, 5% had some complication. The clinical course of the acute phase of CD is mostly benign and the signs and symptoms usually disappear spontaneously in around 1 to 3 months. However, the fatal evolution occurs in < 5% of patients in the acute phase, when contaminated by the classic vector route (triatomine insect bite), especially in patients who progress to refractory heart failure. Despite this, in acute cases caused by oral contamination, the acute disease is usually more severe and the observed mortality is higher. This is possibly due to the inoculation of high parasite load and the ability to penetrate through the gastrointestinal mucosa, which is very permeable to the parasite, in these situations.¹⁸

CONCLUSION

Through this study, it was possible to achieve the proposed objective through the knowledge of the sociodemographic profile of patients with ACD followed up in a

specialized outpatient clinic in Abaetetuba-PA, which highlighted the vulnerabilities of the participants and allows the elaboration of preventive strategies, since, low income and schooling are related to the higher prevalence of ACD. Thus, it is expected

that the results of this research promote better planning for the promotion and health education of this population, with the aim of reducing ACD-related morbidity and mortality.

REFERENCES

1. Brasil. Ministério da Saúde. Guia de vigilância em saúde. 1st ed. Brasília: Secretaria de Vigilância em Saúde; 2017. 250 p. Disponível em: http://bvsms.saude.gov.br/bvs/publicacoes/guia_vigilancia_saude_volume_1.pdf Acesso em 24 ago 2019.
2. Dias JCP, Ramos AN, Luquetti, Gontijo ED, Alejandro, Torres RM, et al. II Consenso Brasileiro em Doença de Chagas, 2015. Epidemiol Serv Saúde. 2016 doi: http://www.iec.pa.gov.br/template_doi_ess.php?doi=10.5123/S1679-49742016000500007&scielo=S2237-96222016000500007
3. Brasil M da S. Guia de vigilância em saúde. 1st ed. Brasília: Secretaria de Vigilância em Saúde; 2014. 814 p. Disponível em: www.saude.gov.br/svs Acesso em 24 ago 2019.
4. Brasil M da S. Guia de vigilância em saúde. 1st ed. Brasília: Secretaria de Vigilância em Saúde; 2017; 286 p. Disponível em: www.saude.gov.br/bvs Acesso em 24 ago 2019.
5. Brasil. Ministério da Saúde. Doenças negligenciadas: estratégias do Ministério da Saúde. Rev Saúde Pública. 2010. doi: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0034-89102010000100023&lng=pt&tlng=pt
6. Vargas A, Malta JMAS, da Costa VM, Cláudio LDG, Alves RV, Cordero G da S, et al. Investigação de surto de doença de Chagas aguda na região extra-amazônica, Rio Grande do Norte, Brasil, 2016. Cad Saude Publica. 2018. 34(1):1–8.
7. Ferreira RTB, Branquinho MR, Leite PC. Transmissão oral da doença de Chagas pelo consumo de açaí: um desafio para a Vigilância Sanitária. Vig. Sanit. Debate, Rio de Janeiro, 2(4): 4–11, 2014.
8. Gonçalves ES. Mosaico de vulnerabilidades: açaí artesanal e risco da transmissão oral da doença de Chagas. Tese de Doutorado. Universidade de São Paulo. 2017.
9. Teixeira RB, Oliveira SMC de. Perfil de pacientes portadores de Doença de Chagas em Rio Branco, Acre, Brasil. Rev Soc Bras Clin Med. 2015; 13(68):262–5. doi: <http://files.bvs.br/upload/S/1679-1010/2015/v13n4/a5183.pdf>
10. Sousa Júnior A da S, Palácios VR da CM, Miranda C do S, Da Costa RJF, Catete CP, Chagasteles EJ, et al. Análise espaço-temporal da doença de chagas e seus fatores de risco ambientais e demográficos no município de Barcarena, Pará, Brasil. Rev Bras Epidemiol. 2017. 20(4):742–55. doi: <http://files.bvs.br/upload/S/1679-1010/2015/v13n4/a5183.pdf>
11. Andrade NCDS De. Perfil Epidemiológico dos Pacientes Chagásicos atendidos em Hospital Público de Referência Cardiológica em Belém/PA. Rev Cient Núcleo do Conhecimento. 2016. 9(1):118–35. Disponível em: <https://www.nucleodoconhecimento.com.br/saude/pacientes-chagasicos-atendidos-em-hospital-publico?pdf=4787> Acesso em 24 ago 2019.
12. Pereira CML, Azevedo AP, Marinho S da SB, Prince KA de, Gonçalves JTT, Costa MR, et al. Perfil clínico e epidemiológico da doença de chagas aguda no estado de Minas Gerais. Rev Aten Saúde São Caetano do Sul. 2017.15(52):49–54. Disponível em: http://seer.uscs.edu.br/index.php/revista_ciencias_saude/article/view/4523/pdf Acesso em 22 ago 2019.
13. Filho JD da S, Costa AC, Freitas EC, Viana CEM, Lima MA, Andrade MC, et al. Perfil hematológico e bioquímico de pacientes com doença de Chagas atendidos por um serviço de atenção farmacêutica no estado do Ceará TT. Hematological and biochemical profile of patients with Chagas disease attended by a pharmaceutical care service in. J Heal Biol Sci. 2017; 5(2):130–6. Disponível em: <http://periodicos.unichristus.edu.br/index.php/jhbs/article/view/1135> Acesso em 24 ago 2019.
14. Marques AA, Hennington ÉA. As repercussões da Doença de Chagas no contexto de vida e trabalho de usuários de instituto de pesquisa. Saúde em Debate. 2017; 41(spe2):215–24. Doi: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0103-11042017000600215&lng=pt&tlng=pt
15. Júnior AS de S, Coelho HLL, Fonteles MM de F, Oliveira M de F. Problemas relacionados a medicamentos em pacientes com Doença de Chagas durante tratamento com benzonidazol em fortaleza – Ce. Cad Saude Colet. 2009;17(4):893–909. Disponível em: http://www.cadernos.iesc.ufrj.br/cadernos/images/csc/2009_4/artigos/SeEspecial_8.pdf Acesso em 24 ago 2019.
16. Brasil. Ministério da Saúde. Protocolo Clínico e Diretrizes Terapêuticas Doença de Chagas. 1st ed. Brasília: Secretaria de Ciência, Tecnologia e Insumos Estratégicos. 2018; 141 p. Disponível em: <http://conitec.gov.br> Acesso em: 24 ago 2019.
17. Spinelli JLM. et al. Análise espacial, clínico-epidemiológica e laboratorial de crianças internadas com leishmaniose visceral no Pará/Amazônia Brasileira. Saúde Coletiva, 2021; (11)68 Doi: <https://doi.org/10.36489/saudecoletiva.2021v11i68p7629-7646>
18. Simões MV, Romano MMD, Schmidt A, Martins KSM, Marin-Neto JA. Cardiomiopatia da Doença de Chagas. Int J Cardiovasc Sci. 2018 acesso em 24 ago 2019; 31(2):173–89. Disponível em: http://www.scielo.br/pdf/ijcs/v31n2/pt_2359-4802-ijcs-31-02-0173.pdf