

Cardiac Involvement in Acute Chagas' Disease Cases in the Amazon Region

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The cardiac involvement of five patients from the Amazon region with Acute Chagas' Disease (ACD) is described. Four of these patients presented probable oral transmission. All of them presented some degree of cardiac involvement, but there were no deaths.

Introduction

Brazil received a certification in 2006 from the Pan-American Health Organization for being free of the Chagas' disease (CD) vector transmission by *Triatoma infestans*. This fact confirmed an important decrease in this type of CD transmission in the country¹.

On the other hand, the Amazon region, which has always been considered as a low-risk area for transmission, has been presenting an increase in the number of acute and chronic cases. From 1997 to 2008, 617 acute cases were notified in the region as small outbreaks or isolated cases. These outbreaks are often related to the oral ingestion of juices of fruit that are indigenous to the region, such as açai berry². In the state of Amazonas, two ACD outbreaks were identified due to probable oral transmission. The first one occurred in Tefé in 2004³, with 9 cases, and the second one occurred in Coari in 2007, with 25 cases⁴.

There have been few studies that described the mortality/bidity of ACD transmitted by oral route. The presence of wild strains of *Trypanosoma cruzi* and the oral transmission can result in unique characteristics of the cardiac involvement of CD in the Amazon region^{5,6}.

Five patients with a diagnosis of ACD were treated, from January 2006 to December 2007, at *Fundação de Medicina Tropical do Amazonas*, in the city of Manaus, state of Amazonas. The present case report describes the cardiac involvement in these five patients.

Key words

Chagas' disease; juices; açai; Chagas' cardiomyopathy.

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Case Reports

Case 1

MCLR, 45 year-old female patient, from the district of sexo Mojui dos Campos, city of Santarem, state of Para, Brazil. In May 2006, she started to present fever and a diagnosis of ACD was attained through a positive thick drop test for *T. cruzi*. After the diagnosis was attained, an acute infection outbreak was identified in her community, probably related to oral transmission after açai berry ingestion, which the patient had consumed. The electrocardiogram (ECG) showed anterosuperior hemiblock and the echocardiogram showed moderate pericardial effusion. dispneaortopneiaanterossuperior The patient was treated for heart failure (HF) with angiotensin-converting enzyme inhibitor (ACEI), beta-blocker and diuretics and received etiologic treatment for CD with benzonidazole. After the treatment, the anterosuperior hemiblock persisted and the pericardial effusion disappeared. The medications were gradually discontinued.

Case 2

FTRJ, 12-year-old male patient, from the district of Mojui dos Campos, city of Santarém, state of Pará, Brazil. This patient also belongs to the group from the outbreak described above and reported the ingestion of açai berry juice. In May 2006, the patient presented fever and received a diagnosis of ACD attained through a positive thick drop test for *T. cruzi*. He did not present any cardiac complaints. The ECG was normal and the echocardiogram showed a moderate pericardial effusion. After the treatment with benzonidazole, he presented complete resolution of the pericardial effusion.

Case 3

JRLD, 40-year-old male patient from the town of sexo Coari (AM). In April 2007, the patient started to present fever, anorexia and myalgia. Around this same period, an outbreak of ACD was identified, with 25 cases in the town of Coari, probably related to the ingestion of açai berry juice. The patient reported to have ingested açai berry in the same town where the outbreak took place. He sought medical help in Manaus and received a diagnosis of ACD, attained through a positive thick drop test for *T. cruzi*. The ECG showed right-bundle branch block and the echocardiogram was normal. After the etiological treatment, the right-bundle branch block disappeared.

Case 4

JANF, 15-year-old male patient, from a community located on Km 17 of AM-010 Highway, city of Manaus, state of Amazonas, Brazil. In August 2007, the patient started to present fever, dyspnea and chest pain. The patient reported the ingestion of açai berry juice in the town of Coari, where the aforementioned outbreak took place. A diagnosis of ACD was attained through a positive thick drop test for *T. cruzi*. The ECG showed frequent ventricular extrasystoles and the echocardiogram disclosed left ventricular systolic dysfunction, with an ejection fraction (EF) of 50%. The patient was treated for HF with ACEI, beta-blocker and diuretics and underwent etiological treatment for CD with benzonidazole. After the treatment, the examinations were normal and the medications were gradually discontinued.

Case 5

AMO, 46-year-old male patient, from the town of Anama, state of Amazonas, Brazil. In October 2007, the patient started to present palpitations and fever. He received a diagnosis of ACD, attained through a positive thick drop test for *T. cruzi*. The epidemiological history did not allow speculation about the mode of CD transmission. The ECG showed atrial fibrillation (AF), with a mean ventricular rate of 110 bpm. The transthoracic echocardiogram was normal. The patient received etiological treatment for CD with benznidazole. Regarding the AF, the heart rate control was carried out with beta-blocker, anticoagulation therapy and a transesophageal echocardiogram was scheduled for posterior cardioversion. After approximately two weeks of etiological treatment for CD, the patient reverted to sinus rhythm, with no need for the cardioversion of atrial fibrillation (Figure 1).

Discussion

Only six cases of chronic chagasic cardiomyopathy have been described, to date, in the Amazon region⁶⁻⁸. Regarding the acute cases, cardiac alterations, similar to the ones found in patients from endemic areas, have been described, including fatal cases secondary to myocarditis⁹.

In a recent study, Pinto et al¹⁰ described 233 cases of ACD in patients from the Brazilian states of Pará, Amapá and Maranhão, with 40% of patients presenting some cardiac alteration. The most frequent alterations were pericardial effusion (46.2%), ventricular repolarization alteration (38.5%), ventricular extrasystoles (5.8%), right bundle-branch block (4.8%), atrial fibrillation (4.8%) and left ventricular systolic dysfunction (3.7%)¹⁰.

The present case report describes two cases related to an acute infection outbreak in the town of Santarém, state of Pará, Brazil and three isolated cases from the state of Amazonas, Brazil. Four of these patients presented an epidemiological history that was suggestive of oral transmission due to ingestion of contaminated açai berry juice.

All patients presented cardiac alterations, such as right bundle-branch block, anteriosuperior hemiblock, atrial fibrillation, ventricular extrasystoles, left ventricular systolic dysfunction and pericardial effusion (Table 1). Most of the alterations were reversed and there were no deaths.

Conclusion

The present report describes cardiac alterations in ACD in patients from the Amazon region, which suggests a significant morbidity of the disease in this area of the country. This fact reinforces the need for more studies in the region and measures for the prevention of new cases.



Figure 1 - Initial electrocardiogram showing atrial fibrillation (superior) and in sinus rhythm (inferior) after etiological treatment with benzonidazole.

Case Report

Table 1 - Clinical and epidemiological data of the patients

Name	Age (yrs)	Origin	Electrocardiogram	Echocardiogram
MCLR	45	Santarém-PA	ASHB	Moderate PE
FTRJ	12	Santarém-PA	Normal	Moderate PE
JRLD	40	Coari-AM	RBBB	Normal
JANF	15	Manaus-AM	Frequent VE	LV dysfunction LVEF = 50%
AMO	46	Anama-AM	Atrial fibrillation	Normal

ASHB - anteroseptal hemiblock; PE - pericardial effusion; RBBB - right bundle-branch block; VE - ventricular extrasystoles; LVEF - left ventricular ejection fraction.

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