

Chagas Disease Treatment in US: Our Experience

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- 1st national center of excellence for the evaluation and treatment of Chagas disease.
- Collaborative approach along with the Red Cross and the Center for Disease Control (CDC)
- Treatment model involves a team approach with collaboration with cardiologists, infectious disease specialists, pediatricians and obstetricians.

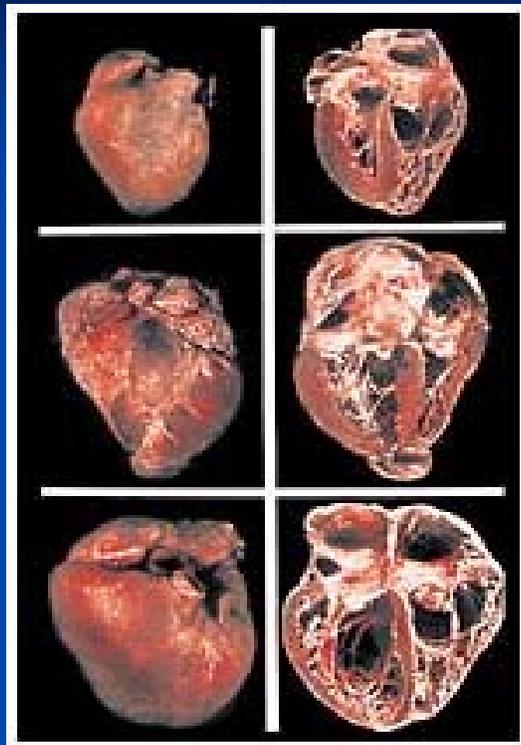


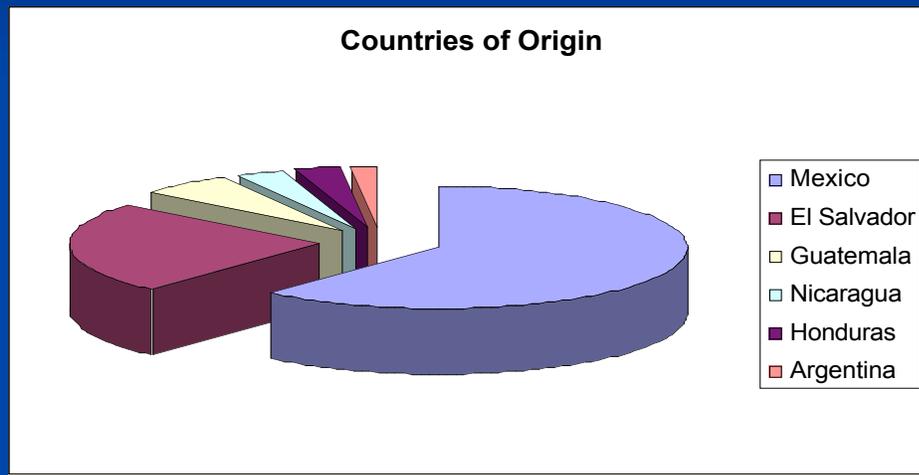
Ongoing clinical research

- Several hospital-based studies to evaluate the prevalence of disease in several populations:
 - End-stage congestive heart failure or cardiomyopathy
 - Early-stage cardiac disease in asymptomatic patients (These individuals are at high-risk and may benefit from antiparasitic therapy)
 - Pregnant women (Possible need for prevention of maternal transmission)
 - HIV positive individuals (Develop more severe

Nonischemic Cardiomyopathy

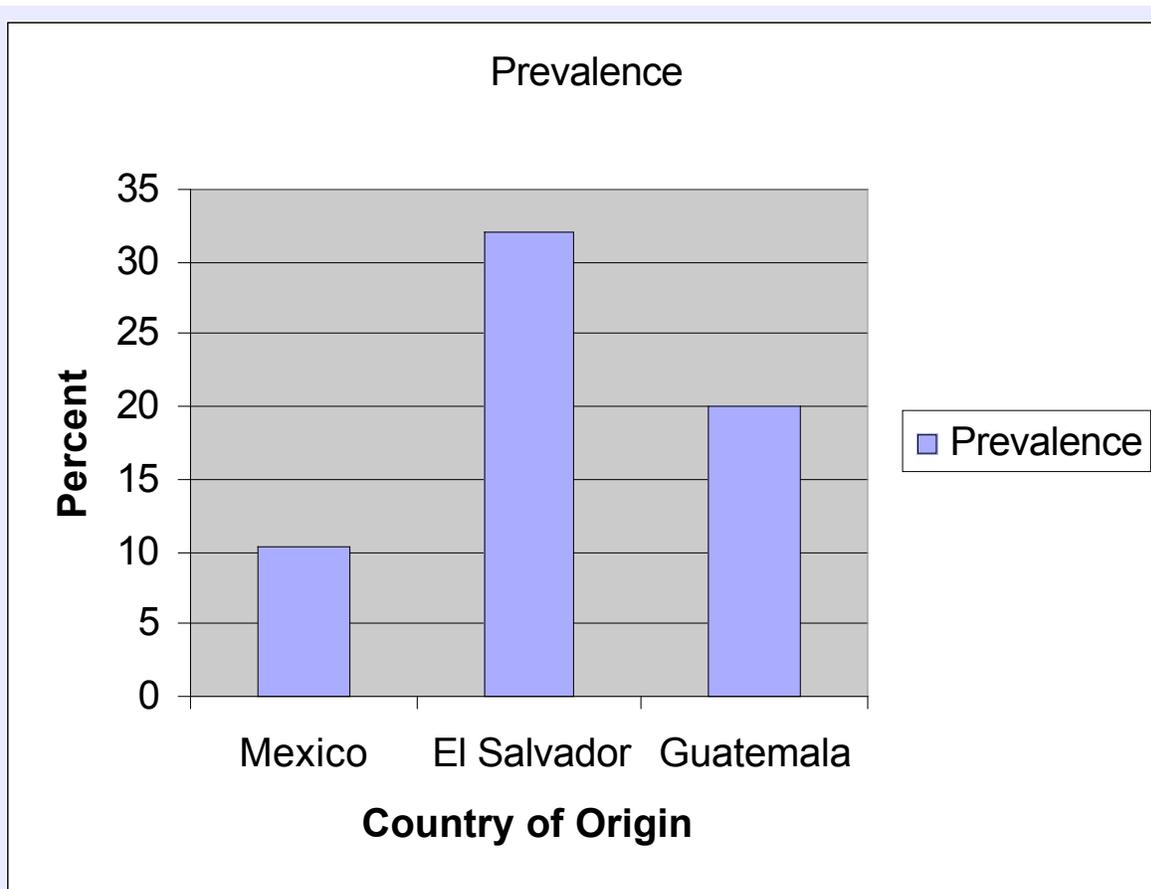
- 93 Latin American immigrant patients with idiopathic cardiomyopathy were enrolled from the cardiology clinic at our hospital.
- Screening for Chagas disease was performed with both an IFA and ELISA. Testing was performed by the CDC.
- The mean age of patients was 55.5 years and had lived in the US for an average of 20.8 years.
- Mean ejection fraction was 23.5% and mean left ventricular end-diastolic diameter (LVEDD) was 6.5cm (normal up to 5.5cm).





Results

- 16 out of 93 patients were positive for T. Cruzi by both IFA and ELISA
- Prevalence of **17.2%** in this population
- Mean age of positive patients was 59.2 years
- Mean ejection fraction of 18.3% and LVEDD of 6.6 cm.
- The mean time of residence in the US was 14 years.



Mortality

- In a median of 18 months of follow-up, 4 patients have died of sudden death with an annual mortality rate of 16.7%.
- In the Chagas negative group, only 3 patients died with a mortality of 2.6%

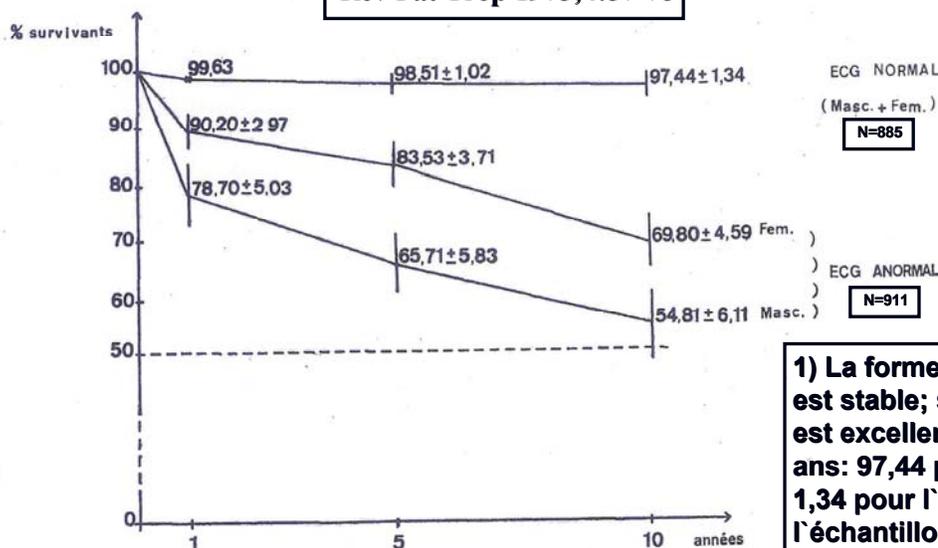
Chagas Conduction Abnormality Group

- Early stage cardiac involvement usually presents with conduction abnormalities on electrocardiogram (EKG), including right bundle branch block (RBBB), left anterior/posterior fascicular blocks (LAFB/LPFB), and left bundle branch block (LBBB).
- Identification of disease at this stage may lead to early treatment and potentially delay in the progression to end-stage cardiomyopathy.

CONTRIBUTION AUX ESTIMATIONS DE MORBIDITÉ ET DE MORTALITÉ DANS LA MALADIE DE CHAGAS (Trypanosomose américaine)

EMMANUEL FORICHON
Rev Pat Trop 1975;4:57-78

Bambui (MG)
1943 – 1973
N = 1796



1) La forme indéterminée est stable; son pronostic est excellent (survie à dix ans: 97,44 pour cent ± 1,34 pour l'ensemble de l'échantillon).

Figure 1 : Pourcentages de survie après le diagnostic selon l'ECG initial et le sexe chez des patients séropositifs (Réaction de Machado-Guerreiro)



Cardiac morbidity and mortality due to Chagas' disease: prospective electrocardiographic study of a Brazilian community

JAMES H. MAGUIRE, M.D., RODNEY HOFF, D.Sc., ITALO SHERLOCK, M.D.,
ARMÊNIO C. GUIMARÃES, M.D., ADRIAN C. SLEIGH, F.R.C.P., NILSON BORGES RAMOS, M.D.,
KENNETH E. MOTT, M.D., AND THOMAS H. WELLER, M.D.

TABLE 6

Mortality according to seroreactivity to *T. cruzi* and ECG findings for persons 20 to 59 years old on entry into the study

Group	n	Mortality per 1000 person-years ^A	Relative risk	95% confidence limits	p value
Seropositive, normal electrocardiogram	140	3.2 (3;949)	1.0		
Seronegative, normal electrocardiogram	116	3.9 (3;771)	1.1	0.2–5.4	0.45
Seropositive, RBBB ^B	38	33.5 (8;239)	7.3	2.5–20.6	0.0001
Seropositive, VEs ^B	25	39.2 (6;153)	7.6	2.5–23.5	0.0002
Seropositive, RBBB and VEs	9	116.3 (5; 43)	12.7	4.1–39.4	<0.0001

Relative risk = estimate of the rate ratio (mortality of group ÷ mortality of seropositive group with normal electrocardiogram) calculated from age-stratified data (10 year strata)²⁰; VEs = ventricular extrasystoles.

^ANumbers in parentheses are the number of deaths, and the number of person-years of observation.

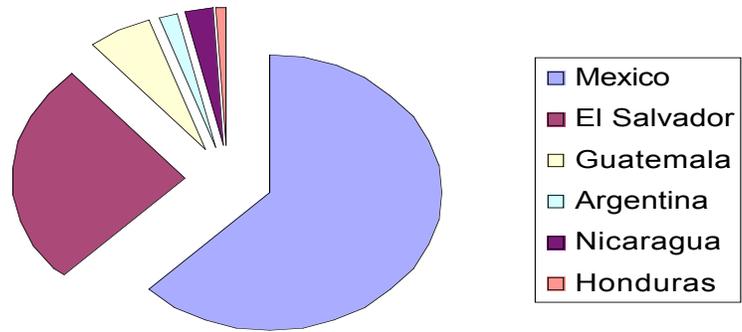
^BIncludes nine persons with both RBBB and VEs.

Circulation 1987;75:1140-114

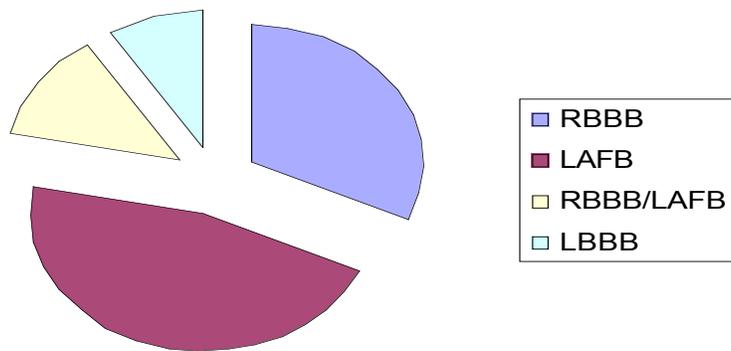
Study Methods

- All EKGs performed in our health care system were screened for presence of conduction abnormalities.
- Patients were contacted and enrolled in the trial if they resided in Latin America for at least 12 months and had no history of cardiac disease.
- 238 consecutive patients were screened for Chagas disease
- The mean age of patients was 47.6 years and had lived in the US for an average of 20.1 years.

Country of Origin

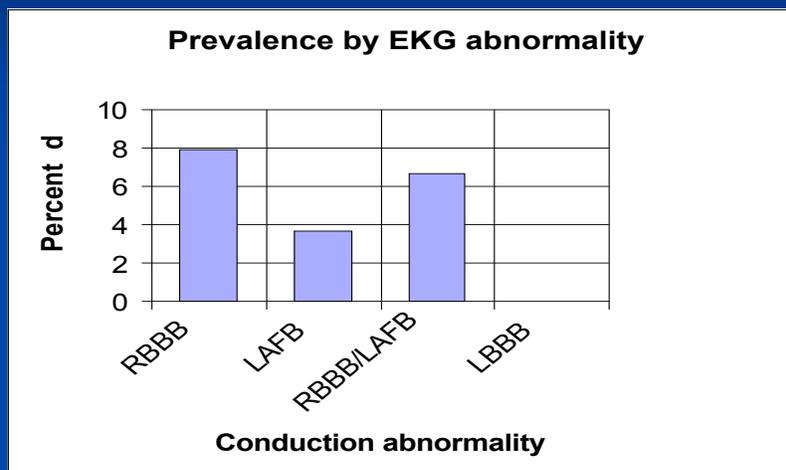


EKG Abnormality

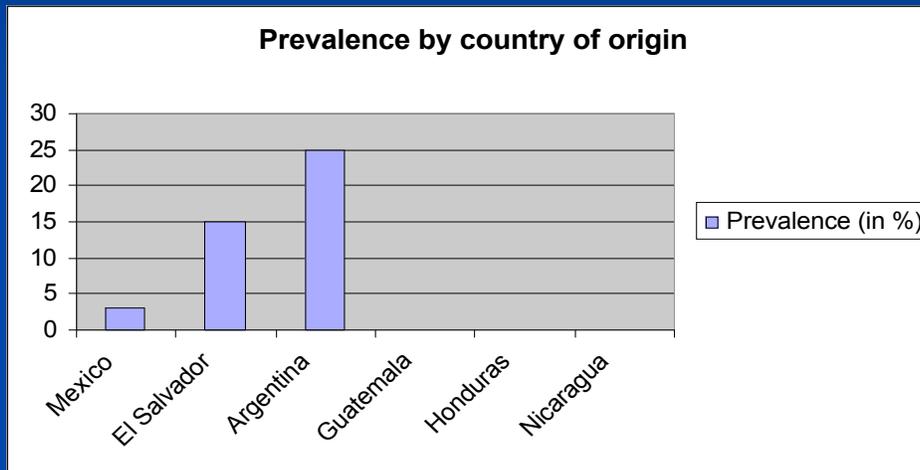


Results

- 11 patients have been identified as positive in this group by both ELISA and IFA.
- Overall prevalence of 4.7%.



Positive cases by Country



Community Outreach Project

- No good data exists on community prevalence of Chagas disease in the US
- Only data is from blood banks. This prevalence may be too low as blood donors tend to be: more affluent and educated, less likely to be from rural areas with poor housing, less likely to be illegal immigrant.
- It is essential to accurately understand the disease burden such that we can better address the public health aspects of the disease.

Community Outreach Project

- We are currently in the early stages of a large community-based trial to attempt to answer this question.
- We hope to enroll approximately 2000 patients (780 to date), on whom the following evaluation will be performed:
 - Chagas serology
 - EKG
 - Basic Echocardiogram to evaluate cardiac size/function.
 - Questionnaire, including geographic/residential and medical history

Community Outreach

- To date, results available on 475 patients
- 6 patients have been confirmed positive
- Prevalence of 1.15%

Chagas Population

- To date, we have identified 50 patients with Chagas disease in our clinic:
 - 34 from prevalence studies
 - 11 from Red Cross
 - 5 from various other referrals
- Only 25 patients have participated in antiparasitic therapy. Reasons for not receiving treatment include:
 - 16 with end-stage cardiomyopathy
 - 3 with other significant comorbidities
 - 1 refused treatment
 - 4 lost to follow up

Treatment Issues

- To date, we have initiated antiparasitic therapy on 25 patients.
- Mean age of treated patients is 42.9 years old. 3 patients are over the age of 50.
- 10 patients have EKG abnormalities and 15 have normal EKGs

Medication Tolerance

- High rates of side effects in our group:
 - Headache: 19 (76%)
 - Nausea/Vomiting: 16 (64%)
 - Anorexia/Weight Loss: 12 (48%)
 - Abdominal pain: 10 (40%)
 - Anxiety: 9 (36%)
 - Fatigue: 9 (36%)
 - Depression: 5 (25%)
 - Arthralgias: 4 (16%)
 - Rash: 1 (4%)

Medication Tolerance

- 9 patients had dose decreased (36%)
- 5 patients had treatment terminated prematurely before completing course (20%)