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TEN-YEAR INCIDENCE OF CHAGAS CARDIOMYOPATHY AMONG ASYMPTOMATIC T. CRUZI SEROPOSITIVE, FORMER BLOOD DONORS

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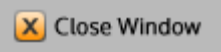
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Proof**CONTROL ID:** 1400776**TITLE:** Incidence Of Chagas Cardiomyopathy And Relative Diagnostic Value Of Electrocardiogram (ECG) Versus Echocardiogram (ECHO) Among T. Cruzi Seropositive Donors**AUTHORS (LAST NAME, FIRST NAME):** Sabino, Ester C.^{7, 2}; Ribeiro, Antonio⁴; Patavino, G. M.⁷; Capuani, Ligia D.²; de Almeida Neto, Cesar²; Di Lorenzo Oliveira, Claudia³; Carrick, Danielle M.⁵; Custer, Brian^{6, 1}; Busch, Michael P.^{6, 1}; Murphy, Edward L.^{1, 6}**INSTITUTIONS (ALL):** 1. University of California San Francisco, San Francisco, CA, United States.
2. Fundacao Pro-Sangue - Hemocentro de Sao Paulo, Sao Paulo, Brazil.
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7. Faculdade de Medicina da Universidade de Sao Paulo, Sao Paulo, Brazil.**PRESENTATION TYPE:** Oral or Poster Presentation**CURRENT CATEGORY:** Scientific**CURRENT SUB-CATEGORY:** Transfusion-Transmitted Infectious Diseases II: Bacteria, Parasites, Prions**ABSTRACT BODY:****Background/Case Studies:** Few studies have prospectively evaluated the natural history of Chagas cardiomyopathy, including disease penetrance, prognostic factors and indications for treatment. Nor has the diagnostic utility of ECHO been compared to the simpler and less costly ECG screening.**Study Design/Methods:** In a retrospective cohort study, T. cruzi seropositive blood donors with an index blood donation in 1996-2002 in Sao Paulo and Montes Claros, Brazil were matched to seronegative donors on index donation date, age, gender and city. 101 Chagas cardiomyopathy patients served as positive controls. In 2009-2010, all subjects underwent a health history questionnaire, medical examination, standardized ECG and ECHO. Subjects with abnormal screening EKG or ECHO were referred to a blinded panel of 3 cardiologists who adjudicated the outcome of Chagas cardiomyopathy. Diagnostic sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) were calculated separately for ECHO and ECG.**Results/Findings:** Mean follow-up time was 10.5 years for the seropositives and 11.1 years for the seronegatives. The sensitivity of the combined ECHO/ECG and expert panel algorithm was 98%, based on diagnoses of cardiomyopathy in 99 of 101 previously diagnosed Chagas cardiomyopathy patients, of whom 1 (1%) expert referral was triggered by ECHO alone, none by ECG alone and 98 (99%) by both ECHO and ECG. In contrast, 24 (5%) of 488 T. cruzi seronegative control donors were falsely classified as having Chagas cardiomyopathy (specificity = 95%). Among the 499 T. cruzi seropositives, 315 (63%) were referred to the expert panel and 120 (24%) had definite Chagas-like cardiomyopathy, leading to an incidence difference of 1.85 per 100 person-years attributable to T. cruzi infection. The Table summarizes the sensitivity, specificity and predictive values of ECHO and ECG screening for cardiomyopathy diagnosis among the T. cruzi seropositive individuals.**Conclusion:** There is a substantial (~2%) annual incidence of Chagas cardiomyopathy among initially asymptomatic T. cruzi seropositive blood donors. Among seropositives, ECG had better sensitivity and ECHO had better specificity. Both tests had poor positive predictive value, but ECG had better negative predictive value. Future studies could use a two-step algorithm in which ECG is used to exclude those with a negative

test and low likelihood of disease. ECHO would be done to refine the diagnosis only in patients with abnormal ECG findings.

Expert Panel Diagnosis of Cardiomyopathy in T. cruzi seropositives			
ECHO	YES (N=120)	NO N=(379)	
Triggered by ECHO	75	77	PPV=49%
Not Triggered by ECHO	45	302	NPV=87%
	Sens=63%	Spec=80%	
ECG			
Triggered by ECG	114	151	PPV=43%
Not Triggered by ECG	6	228	NPV=97%
	Sens=95%	Spec=60%	

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Study Name: REDS-II Brazil international component

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