

Results: Sensitivity of limited HCE in detecting LV hypertrophy was 85.7%, in assessment of cardiac structure and function with prior myocardial infarction –83.3%, in assessment of valvular disease –100%. Specificity was 88.2%, 100%, 75%, respectively. Negative predictive value was 83.3%, 75%, 100%, respectively. Positive predictive value was 90%, 100%, 71.4%, respectively. Predictive accuracy was 86.8%, 88.9%, 84.6%, respectively.

Conclusions: Despite some limitations HCE can be used with a good result by the physician in the outpatient department in patients with cardiovascular disease.

LEFT VENTRICULAR TORSION AMPLITUDE IS GREATLY DECREASED AND ITS DYNAMICS DISTORTED AT ADVANCED STAGES OF CHAGAS' HEART DISEASE

Saraiva, R. M.; Silva, S. K.; Dos Santos, C. R. F.; Da Costa, A. R.; Brasil, P. E. A. A.; Sengenis, L. H. C.; Holanda, M. T.; De Sousa, A. S.; Xavier, S. S.; Moreno, A. M. H.

Ipec Fundação Oswaldo Cruz

Background: Chagas' heart disease is still a major health problem in Latin America and its hallmark is heart failure. Left ventricular (LV) torsion is decreased in heart failure from other etiologies and may become an important tool to evaluate cardiac performance.

Objective: We sought to analyze LV torsion in different Chagas' disease stages.

Methods: We performed a longitudinal study between March and October 2010. Echocardiograms from 17 controls without Chagas' disease and 139 patients were analyzed including 44 indeterminate (no cardiac involvement), 27 in stage A (changes limited to the electrocardiogram), 31 in stage B (asymptomatic with abnormal LV systolic function), 26 in stage C (symptomatic heart failure), and 11 in stage D (end-stage heart failure).

Results: All controls and patients at indeterminate and stage A presented normal LV systolic function, while LV ejection fraction was progressively decreased from stage B to D (B:56 ± 8%; C:36 ± 10%; D:25 ± 7%, P < 0.0001). LV torsion was similar among controls (12.7 ± 3.9°), indeterminate (11.7 ± 5.5°) and stage A patients (9.9 ± 4.6°), but decreased progressively from stage B to D (B:8.6 ± 6.3°; C:4.7 ± 4.1°; D:0.1 ± 3.1°, P < 0.0001). While all controls presented apical counterclockwise and basal clockwise rotation movement, LV torsion pattern was abnormal in 15% of the indeterminate and stage A patients, 37% of stage B patients, 35% of stage C patients, and in 82% of stage D patients.

Conclusion: LV torsion is decreased and its dynamics distorted in patients at advanced stages of Chagas' heart disease. The contribution of LV torsion changes to the progression and prognosis of Chagas' disease remains to be determined.

LEFT VENTRICULAR DIASTOLIC FUNCTION AND LEFT ATRIUM FUNCTION IN PATIENTS WITH CHAGAS' DISEASE AND NORMAL LEFT VENTRICULAR SYSTOLIC FUNCTION EVALUATED BY ADVANCED ECHOCARDIOGRAPHIC METHODS

Nascimento, C. A.*; Silva, S. K.; Dos Santos, C. R. F.; Gomes, V. A. M.*; Costa, A. R.; Brasil, P. E. A. A.; Xavier, S. S.; Cunha, A. B.*; Moreno, A. M. H.; Saraiva, R. M.

Instituto Nacional De Cardiologia; Ipec Fundação Oswaldo Cruz*

Background: Chagas' disease is still a major health problem in Latin America. Left ventricular (LV) diastolic dysfunction is present in different stages of Chagas' disease usually in association with LV systolic dysfunction.

Objective: We sought to analyze LV diastolic and left atrial (LA) functions in patients with normal LV systolic function using newer echocardiographic methods.

Methods: We performed a longitudinal study between March and October 2010. Echocardiograms from 34 indeterminate (no cardiac involvement), 22 patients at stage A (changes limited to the electrocardiogram), and 17 controls without Chagas' disease were analyzed. LV diastolic function was analyzed by interrogation of the mitral inflow, pulmonary vein flow and tissue Doppler of the mitral annulus. LA function was analyzed by 3-dimensional measurement of

maximum, minimum and precontraction LA volumes, and by LA strain analysis.

Results: All groups presented similar age and normal LV systolic function. Diastolic dysfunction was present in 9% of the indeterminate and 41% of stage A patients. Parameters derived from tissue Doppler were the best ones to discriminate the presence of diastolic dysfunction. LA volume increased in both indeterminate and stage A patients, specially the precontraction LA volume, in ml/m² (controls:10 ± 3; indeterminate:12 ± 4; stage A:12 ± 4; P < 0.05), while LA function indexes derived from LA volumes remained similar among the groups. LA strain positive value was decreased in indeterminate patients, while LA strain negative value was similar among all groups.

Conclusions: Patients with Chagas' disease and preserved LV systolic function may present LV diastolic dysfunction, mainly by tissue Doppler, while LA contractile function is still preserved.

GLOBAL LONGITUDINAL STRAIN PREDICTS MORTALITY IN PATIENTS WITH STABLE HEART FAILURE AND SYSTOLIC DYSFUNCTION

Barretto, R. B. M.; Assef, J. E.; Piegas, L. S.; Paganelli, M.; Calvilho, A. A.; Le Bihan, D. C.; Finger, M. A.; Rossi, J. M.; Meneghello, R. S.; Sousa, A. G. M. R.

Instituto Dante Pazzanese DE Cardiologia

Background: Although 2D strain based on speckle tracking has been established as a method to predict cardiac events in patients with systolic dysfunction following acute decompensated heart failure, the relationship of longitudinal 2D strain and mortality on patients with stable heart failure and systolic dysfunction has not been evaluated. We sought to appraise whether global longitudinal 2-dimensional (2D) strain can be a prognostic parameter of mortality on patients with stable heart failure and systolic dysfunction.

Methods: One hundred fifty-five patients of the heart failure ambulatory (age 58 ± 12 years old, 35% female, LVEF 29 ± 6%, 49% Diastolic dysfunction grade 3, 28% NYHA Class III) without any hospitalization or acute event for 90 days underwent clinical evaluation and conventional and tissue Doppler echocardiography. Using dedicated software, we measured the mean global longitudinal strain (GLS) in apical 4- and 2- and 3 chamber views. The end points were defined as death or heart transplant.

Results: There were 15 deaths and 5 heart transplants during 1.7 ± 0.8 years of follow-up. In univariate analysis, male sex, class III (NYHA), left atrial diameter and volume, left ventricular diameters, mass and volume, LVEF, Diastolic dysfunction grade 3, and GLS were predictive of the end points. In multivariate Cox models, male sex, class III (NYHA), left atrial diameter, left ventricular diameters, mass and volume, LVEF, Diastolic dysfunction grade 3, and GLS were independently associated with cardiac events.

Conclusions: GLS is a predictor of mortality of stable patients with heart failure and systolic dysfunction.

COMPARISON OF ECHOCARDIOGRAPHIC PARAMETERS IN SEVERE HEART FAILURE PATIENTS WITH LOW EXERCISE CAPACITY: DOES CHAGASIC ETIOLOGY COUNT?

Otto, M. E. B.; Sanchez, A. C. G. B. L.

Instituto De Cardiologia Do Distrito Federal

Objective: Limited information exists comparing exercise capacity (EC) in severe heart failure (SHF) of different etiologies. The aim of this study was to compare echocardiographic parameters in patients with low EC determined by peak oxygen uptake (VO₂max) obtained by treadmill test in Chagas (CH) and ischemic (IS) patients.

Methods: We prospectively studied 17 patients (men, age 57 ± 11 years old, 9 CH and 8 IS) who underwent transthoracic echocardiography and cardiopulmonary exercise test on the same day. In addition to conventional measures of diameter, indexed left ventricle mass (ILVM) and indexed left atrial volume (ILAV), Tissue Doppler velocities were obtained at the septal and lateral mitral annulus to estimate filling pressures by the E/average e' ratio. EC was assessed by VO₂ max and anaerobic threshold (VO₂AT).