

Abstract No. **29**

Category: **Heart Failure and Cardiomyopathies**

Title: **Tissue Doppler S Wave Velocity in the Indeterminate Form of Chagas Disease: A Potential Marker of Progression to Chronic Chagas Cardiomyopathy**

Primary Author: **Luis Eduardo Echeverria Correa**

Abstract:

Background: Almost one-third of the patients affected by Chagas Disease (CD) will develop Chronic Chagas Cardiomyopathy (CCM), being the first cardiac abnormalities exhibited after 10-15 years after the infection. On the other hand, older patients (>45 years-old) that did not develop cardiac anomalies by this point have a very low risk of progressing to CCM. The factors that may predict progression to cardiomyopathy in this context have not been elucidated. Therefore, this study aimed to analyze the echocardiographic differences and similarities among patients with the chronic indeterminate form (CIF) and those with CCM, in order to identify variables whose trend in the CIF group could be similar to the one observed in CCM individuals.

Methods: Cross-sectional study, performed at the Fundación Cardiovascular de Colombia. 96 patients with serological diagnosis of CD without electrocardiographic or echocardiographic involvement characteristic of CD were compared to 104 patients with proved CCM. A transthoracic echocardiography was performed using a GE Vivid S6 ultrasound system. Acquisitions were performed by a single certified and experienced cardiac sonographer blinded to the patient data.

Results: The CIF population was divided into two groups: Those still at risk of CCM (<45 years) and those at low risk of progression (>45 years). CCM patients showed a significantly lower lateral S wave speed (LSWS) value when compared to CIF ones ($p < 0.0001$), being this value also lower in CIF patients older than 45 years old when compared to the younger ones ($p = 0.03$). However, CIF patients at risk of CCM showed a linear correlation between age and the LSWS (Coef. -0.15 ; 95%CI $-0.256, -0.044$), a finding that was not observed in the older CIF individuals. Moreover, CIF patients at risk of CCM that had a LSWS < 11 cm/seg showed a directly proportional global longitudinal strain worsening with age (Coef. 0.23 ; 95%CI $0.046, 0.413$), as observed in CCM patients (Coef. 0.263 ; 95%CI $0.198, 0.328$) but not in at-risk patients with S wave > 11 cms/seg or older CIF individuals.

Conclusion: In this study, the subgroup of CIF patients still at risk of progression to CCM that had a lateral S wave value < 11 cms/s showed a progressive worsening of their global longitudinal strain values with age, a behavior observed in CCM patients but not in the others individuals with the CIF. The prognostic significance of these findings needs to be validated in prospective follow-up studies; however, the observed trend postulates lateral tissue doppler S wave value as a promising marker of early myocardial involvement and potential risk of CCM development.