

 **Arrhythmias****THE ECHOCARDIAC MARKER OF LEFT ATRIAL REMODELING AFTER PULMONARY VEIN ISOLATION**

Poster Contributions

Poster Sessions, Expo North

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Background: Left atrial (LA) remodeling promotes an electrical conduction delay in the atria and link to a recurrence of atrial fibrillation (AF) in patients treated by pulmonary vein isolation (PVI). The aim of this study was to validate the LA electromechanical coupling in patients who were referred to the electrophysiology laboratory to undergo PVI for AF.

Methods: Forty consecutive patients with drug-refractory AF were included (Age, 61 yrs). We excluded patients with coronary artery disease, predominant valvular heart disease, cardiomyopathies and left ventricular ejection fraction less than 50%. The LA electrical activation time using electroanatomic mapping system was defined as the conduction time from the P wave onset to the latest-activated LA potential during sinus rhythm immediately following successful PVI. Echocardiography was performed within 24 hours after the procedure. The electromechanical conduction time (EMT) was non-invasively measured as the time intervals from the P wave onset to the peak late diastolic velocity (EMT-a') by pulsed-wave tissue Doppler and longitudinal strain (EMT-ε) by speckle tracking echocardiography during the LA lateral wall contraction from apical four-chamber view.

Results: The mean values of left ventricular ejection fraction, LA electrical activation time, LA potentials, LA volume index, LA reservoir function, EMT-a' and EMT-ε were 63%, 99ms, 1.2mV, 42ml/m², 19%, 166ms and 210ms, respectively. The LA electrical activation time was closely related to the EMT-a' (R²= 0.493, P< 0.0001), EMT-ε (R²= 0.446, P< 0.0001) and LV volume index (R²= 0.261, P< 0.001). In addition, the averaged LA potential was inversely correlated with the EMT-ε (R²= 0.200, P< 0.01).

Conclusions: This validation study demonstrated the close link between LA electrical activation and mechanical contraction. The EMT-ε may add as the non-invasive parameter of LA remodeling.