REACTIVE HYPEREMIA PERIPHERAL ARTERIAL TONOMETRY SCORE IDENTIFIES RESPONDERS TO CARDIAC RESYNCHRONIZATION THERAPY

ACC Poster Contributions
Ernest N. Morial Convention Center, Hall F
Monday, April 04, 2011, 3:30 p.m.-4:45 p.m.

Session Title: Optimizing CRT Outcomes
Abstract Category: 24. Myocardial Function/Heart Failure—Clinical Nonpharmacological Treatment
Session-Poster Board Number: 1120-33

Authors: Sercan Okutucu, Farzin Jam, Ergun B. Kaya, Banu Evranos, Sabanov Cingiz, Ugur N. Karakulak, Fatihoglu G. Sefik, Kudret Aytemir, Giray Kabakci, Lale Tokgozoglu, Ozkutlu Hilmi, Oto Ali, Hacettepe University Department of Cardiology, Sihhiye, Turkey

Background: Reactive hyperemia peripheral arterial tonometry (RH-PAT) is a noninvasive and objective tool to evaluate endothelial dysfunction. Cardiac resynchronization therapy (CRT) improves outcomes in heart failure. We aimed to assess the relationship between RH-PAT score and response to CRT.

Methods: Eighteen patients (57.8 ± 10.4 years; 15 male; left ventricular ejection fraction 24.1 ± 3.3%) with heart failure were enrolled. Using RH-PAT, endothelial function was assessed in all patients before and 3 months after CRT. The RH-PAT score < 1.7 signified endothelial dysfunction. An echocardiographic response was defined as a reduction in left ventricular end-systolic volume (LVESV) ≥15% at 3rd month.

Results: Baseline RH-PAT score was higher (1.80 ± 0.20 vs 1.53 ± 0.20, p= 0.018) in responders (12 patients, 66.7%). Responders had significant improvement in RH-PAT score (1.80 ± 0.20 vs 1.98± 0.20, p=0.003). There was no improvement in RH-PAT score in non-responders. Basal RH-PAT score ≥ 1.7 was an independent predictor of response to CRT (OR= 2.3; 95% CI, 1.1-97.5, p<0.048). Linear regression analysis revealed that the basal RH-PAT score was an independent predictor of reduction in LVESV (β=1.14, p=0.016). There was a good correlation between reduction in LVESV and ΔRH-PAT score (r=0.689, p=0.001).

Conclusions: Baseline RH-PAT score ≥ 1.7 independently identifies CRT responders. Improvement in ΔRH-PAT score after CRT correlated with degree of reduction in LVESV.