Heart Failure

ENDOTHELIAL DYSFUNCTION MEASURED BY PERIPHERAL ARTERIAL TONOMETRY PREDICTS PROGNOSIS IN PATIENTS WITH HEART FAILURE WITH PRESERVED EJECTION FRACTION

ACC Moderated Poster Contributions

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Background: There is need for risk stratification of adverse events in patients with heart failure with preserved ejection fraction (HFpEF) given that the prognosis of this population is poor. This study was performed to examine whether endothelial dysfunction measured by peripheral artery tonometry (PAT) can predict prognosis of patients with HFpEF.

Methods: Log-transformed reactive hyperemia index (L_RHI) was measured in 168 patients with HFpEF, and followed-up for Major Adverse Cardiac and Cerebrovascular Events (MACCE), including death from all causes, non-fatal myocardial infarction, unstable angina, re-hospitalization because of congestive heart failure, and cerebral infarction for 300 days. Aside from MACCE, only re-hospitalization due to HF and HF-related death were classified as HF-related events.

Results: Patients were divided into two groups: those with L_RHI $\geq$ 0.5 (n = 93) and L_RHI < 0.5 (n = 75). During follow-up, MACCE occurred in 8 (8.6%) patients in the L_RHI $\geq$ 0.5 group and 29 (38.7%) patients in the L_RHI < 0.5 group, and HF-related events occurred in 6 (6.5%) patients in the L_RHI $\geq$ 0.5 group and 28 (37.3%) patients in the L_RHI < 0.5 group (both P < 0.001). Furthermore, Cox regression analysis indicated that L_RHI < 0.5 was an independent predictor for both MACCE (HR 5.27, P < 0.001) and HF-related events (HR 6.79, P < 0.001).

Conclusions: L_RHI < 0.5 measured by non-invasive PAT is a powerful predictor of poor prognosis in patients with HFpEF.