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Heart Failure and Cardiomyopathies

RESISTIN AND RISK OF SUBCLINICAL HEART FAILURE AND CARDIAC FIBROSIS: THE MULTI-ETHNIC STUDY OF ATHEROSCLEROSIS (MESA) STUDY

Poster Contributions

For exact presentation time, refer to the online ACC.22 Program Planner at <https://www.abstractsonline.com/pp8/#!/10461>

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Background: Resistin is a circulating inflammatory biomarker that is associated with various cardiovascular diseases (CVD). In this study, we determined the associations of resistin levels with myocardial fibrosis, heart failure (HF) biomarkers, and incident HF and its subtypes.

Methods: We analyzed data on 1,968 participants from the Multi-Ethnic Study of Atherosclerosis with resistin levels measured at Exams 2 or 3. Linear regression models were employed to assess the relationship between resistin levels with markers of fibrosis from cardiac magnetic resonance (CMR) at Exam 5 and HF related biomarkers, hs-cTnT and NT-proBNP, from Exam 3. The relationship between resistin levels and subsequent incident HF, HF with reduced ejection fraction (HFrEF), and HF with preserved ejection fraction (HFpEF) was examined using multivariable Cox proportional hazards models.

Results: The mean age of the cohort was 64.7 years and 50.0% were female. Resistin levels showed no significant correlations with myocardial fibrosis variables measured by CMR-derived native T1 times or extracellular volume fraction. Similarly, resistin levels were not associated with NT-proBNP levels but were positively correlated with hs-cTnT levels. Over a median follow-up of 10 years, 74 participants (4%) developed incident HF. Compared with those without incident HF, average resistin levels were higher in the group experiencing incident HF (19.8 ± 8.8 vs. 16.1 ± 6.7 ng/mL, $p < 0.01$). After Cox variant adjustments in three different models, higher resistin levels were associated with incident HF (Model 3, HR 1.44, CI 1.17-1.77, $p < 0.01$), with near statistical significance with HFrEF (Model 3, HR 1.41, CI 0.98-2.01, $p = 0.06$), but not with HFpEF (Model 3, HR 1.13, CI 0.81-1.58, $p = 0.46$). Model 3 was adjusted for age, gender, education level, race/ethnicity, smoking, diabetes mellitus, height and weight, hypertension, systolic blood pressure, Total and LDL level, statin use, and interval myocardial infarction.

Conclusion: In a multiethnic cohort free of CVD at baseline, elevated circulating resistin levels are associated with incident HF, HFrEF and hs-cTnT levels. Statistical power for HF subtypes was limited.