PLASMA GALECTIN-3 LEVELS PREDICT LEFT VENTRICULAR REMODELLING DETERMINED BY SEQUENTIAL ECHOCARDIOGRAPHY: RESULTS FROM THE DEVENTER-ALKMAAR HEART FAILURE STUDY

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Background: Galectin-3 is a recently discovered marker for myocardial fibrosis and elevated levels are associated with an impaired outcome in patients with heart failure. However, whether galectin-3 is associated with cardiac remodeling is unknown. Therefore we determined the utility of galectin-3 measurements as a novel biomarker for left ventricular remodeling in patients with severe chronic heart failure.

Methods and Results: At baseline plasma concentrations of Gal-3 were assessed in 182 heart failure patients in New York Heart Association Class III and IV enrolled in the Deventer-Alkmaar Heart Failure study. Serial echocardiography was performed at baseline and 3 months. Remodelling was defined as progression of Left Ventricular End Diastolic Diameter (LVEDD).

Patients had a mean age of 70.2 ± 0.7 years, 70% of the study population was male and 63% of the patients ischemia was the primary cause of heart failure. At baseline mean LVEDD was 64 ± 8 mm. 25% of the patients showed progression of LVEDD. Kaplan-Meier survival analysis revealed that outcome in patients with progression of the LVEDD was poor compared to patients with regression of the LVEDD (log-rank; p=0.01). Patients with LVEDD progression had significantly higher levels of galectin-3 compared to patients showing regression of LVEDD (15.6 ng/mL vs. 18.1 ng/mL; p=0.01). Multivariate linear regression analyses (including age, sex, duration of heart failure, use of medication, renal function, and NT-proBNP) revealed that only galectin-3 levels were positively correlated to a change in LVEDD (r=0.20, p=0.006).

Conclusion: Galectin-3 levels are associated with remodeling of the left ventricle in serial echocardiography in patients with severe chronic heart failure.