

POSTER PRESENTATION

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# Biomarkers of hemodynamic stress and aortic stiffness post-STEMI: a cross-sectional analysis

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## Background

We aimed to evaluate the association between biomarkers of hemodynamic stress and aortic stiffness assessed at a chronic stage after ST-segment elevation myocardial infarction (STEMI).

## Methods

Fifty-four patients four months after acute STEMI were enrolled in this cross-sectional, single-center study. N-terminal pro B-type natriuretic peptide (NT-proBNP), mid-regional pro-A-type natriuretic peptide (MR-proANP) and mid-regional pro-adrenomedullin (MR-proADM) levels were measured by established assays. Aortic stiffness was assessed by the measurement of pulse wave velocity using velocity-encoding, phase-contrast cardiovascular magnetic resonance imaging.

## Results

NT-proBNP, MR-proANP and MR-proADM concentrations were all correlated with aortic stiffness in univariate analysis ( $r = 0.378$ ,  $r = 0.425$ ,  $r = 0.532$ , all  $p < 0.005$ , respectively). In multiple linear regression analysis, NT-proBNP ( $\beta = 0.316$ ,  $p = 0.005$ ) and MR-proADM ( $\beta = 0.284$ ,  $p < 0.020$ ) levels were associated with increased aortic stiffness independently of age, blood pressure and renal function. In receiver operating characteristic analysis, NT-proBNP was the strongest predictor for high aortic stiffness (area under the curve: 0.82, 95% CI 0.67 - 0.96).

## Conclusions

At a chronic stage after STEMI, concentrations of biomarkers for hemodynamic stress, especially NT-proBNP, are positively correlated with aortic stiffness. These biomarkers

might also be useful as predictors of high aortic stiffness post-STEMI.

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