NO REFLOW PHENOMENON PREDICTS LEFT VENTRICULAR SYSTOLIC DYSFUNCTION BUT DOES NOT PREDICT LEFT VENTRICULAR DIASTOLIC DYSFUNCTION IN PATIENTS WITH REPERFUSED THEIR FIRST ACUTE MYOCARDIAL INFARCTION

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Background: Left ventricular (LV) diastolic dysfunction predicts long-term survival after acute myocardial infarction (AMI). Impaired coronary microcirculation after coronary reperfusion (no-reflow phenomenon) predicts poorer prognosis including LV systolic dysfunction. We investigated the correlation between no-reflow phenomenon and LV diastolic dysfunction after AMI.

Methods and Results: We enrolled consecutive 59 patients with first AMI who underwent percutaneous coronary intervention (PCI) within 24 hours after the onset of AMI. Myocardial contrast echocardiography was performed 15min after successful PCI. Echocardiography was performed on admission and 2 weeks later. We determined ejection fraction (EF) and tissue Doppler-derived index of left ventricular filling pressure, E/e’. An E/e’ ratio > 15 was defined as LV diastolic dysfunction. Two weeks after the onset of AMI, 18 patients had an EF ≤50% and 11 patients had an E/e’ ratio > 15. Multivariate logistic regression analysis revealed that no-reflow phenomenon was an independent predictor of LV systolic dysfunction after AMI (p < 0.05). However, no-reflow phenomenon could not predict LV diastolic dysfunction. Peak CK-MB was an independent predictor of LV diastolic dysfunction (p < 0.05). In addition, there were no significant difference in E/e’ ratio between 43 patients with reflow and 16 patients with no-reflow.

Conclusions: LV diastolic dysfunction after AMI underwent PCI was not related to no-reflow phenomenon but was mainly determined by cardiomyocyte death.