

Left ventricular diastolic function in acute myocardial infarction: advantages and limitations

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Background: Modern approach to evaluation of left ventricular diastolic function should be based on determining the value of left ventricular filling pressures, which are the actual parameters of the symptoms and/or signs and prognosis in acute myocardial infarction.

Aim: Compare parameters of left ventricular filling pressure in patients with acute myocardial infarction (AMI) with antero-septal and inferior localization.

Methods: Prospective study of 60 patients (37 men, mean age 59 ± 10 years) with acute myocardial infarction were divided into two groups. The first group consists of patients with myocardial infarction, antero-septal localization (27 patients) and the second group consists of patients with myocardial infarction inferior localization (33 patients). Accompanied by the ratio of early diastolic filling velocity of mitral flow velocity and early mitral annular filling (E/E'), the difference between the duration of flow reversal in the pulmonary veins and duration of the mitral A wave flow (PVA-MVAdur), and the relative velocity of early diastolic filling mitral flow and color M mode display of early mitral flow (E/Vp) of the left ventricle as determined by continuous (mitral flow) and pulsed color Doppler echocardiographic technique (flow in the pulmonary veins and the mitral ring velocities).

Results: The value of $E/E' \geq 13$ was found in 14 patients (8 patients in the first group, and 6 patients in the second group), while the value of $8 < E/E' < 13$ in 25 patients. The value of $E/E' < 8$ was found in 21 patients. The average value of $Avg = E/E'$ for the first group of patients was $Avg = 10.87$ and the second group of subjects was $Avg = 9.39$ was found to be a statistically significant difference ($p < 0.05$) between the two groups, using the Student's t-test. Using Pearson's correlation coefficient we found that there was a significant

correlation between E/E' and E/Vp in all patients ($P = 0.66$), whereas there was no difference in the correlation of these two proposed relationships between groups ($P = 0.70$ and $P = 0.67$).

When comparing the ratio E/E' and PVA-MVAdur and E/Vp and PVA-MVAdur, Pearson correlation coefficient at a given group of 60 subjects showed no statistically significant correlation of this data. For PVA-MVAdur Pearson correlation coefficient has medium correlation compared to infarcted zone with inferior localization for the patients with $E/E' \geq 13$.

Conclusions: Comparison of parameters of the left ventricular filling pressures, it is proved that the left ventricular filling pressures in acute myocardial infarction is increased. There is a high correlation between the filling pressures and infarcted zone in the AMI antero-septal localization in relation to the inferior localization of E/E' and E/Vp .

KEYWORDS: left ventricular filling pressures, echocardiography, myocardial infarction.

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