with persistent mid-to-late diastolic diameter reduction and increased intracoronary pressure, patients are responsible for a sub-endoactivation zone, which cause a coronary flow reserve in the distal vessel and for clinical symptoms and signs of myocardial ischemia. We sought to approach for quantitative echocardiographic assessment of myocardial function in patients with myocardial bridging by 2-dimensional strain, novel software.

**Methods:** Novel computer software for tissue tracking echocardiography for advanced wall-motion analysis were performed in 18 symptomatic patients (mean age 57 ± 9 years, 10 females) with myocardial bridging of left anterior descending coronary artery at mid to distal segments. Myocardial strain, myocardial strain rate and cardiac output were measured with this software. Myocardial strain was measured as the change in myocardial length normalized to the baseline as a percent change. Strain rate was calculated as the first derivative of myocardial strain. Cardiac output was calculated as the product of the stroke volume and heart rate. The end-diastole, systole, end-systole, and cardiac output were measured. The differences were statistically significant. The strain and strain rate were lower in the remodeling group compared to the non-ischemic group. The cardiac output in the remodeling group was lower than in the non-ischemic group.

**Conclusions:** This study demonstrates that quantitative echocardiographic assessment of myocardial function in patients with myocardial bridging is feasible and may provide valuable information about myocardial ischemia.

665 Two-dimensional strain imaging predicts left ventricular remodeling in patients with first myocardial infarction
B. Kayas, M. Ozayar, E. Atlar, S. Aksoyak, K. Oxunc, F. Ozmen, N. Nasil, S. S. Kose, Hacettepe University, Medical School, Cardiology Dept., Ankara, Turkey

**Background:** Left ventricular remodeling is a complex pathological process of progressive dilatation, leading to systolic dysfunction and heart failure in patients with acute myocardial infarction. We aimed to determine and evaluate myocardial strain echocardiographic parameters, predicting cardiac remodeling process in patients with the first myocardial infarction.

**Methods:** For study, 60 patients (mean age: 58 ± 11.89) with a first ST segment elevated acute myocardial infarction were included in the study. Conventional echocardiography with tissue Doppler, mitral color M-mode imaging and strain imaging were performed during initial hospital admission and after 6 month. Peak systolic myocardial velocities (S'0) were recorded from 4 different sites on the mitral annulus corresponding to the septum, lateral, inferior and anterior sites of the left ventricle by pulsed wave Doppler tissue imaging. Myocardial systolic velocity (S') was calculated as the difference between peak systolic velocity and isovolumic relaxation velocity (E') at the same day, using a specific immunoassay. Furthermore, LV Fraction Fraction (EF), wall motion index (WMI), left ventricular end-systolic volume index (ESVI) and systolic (S') and late diastolic (A') myocardial annulus velocities and their ratio were measured. All variables were reassessed in 3 months following discharge.

**Results:** A statistical significant positive correlation was documented between thickness index and BNP levels (r=0.46, p=0.012) and E/E' ratio (r=-0.393, p=0.05). No correlation was observed between the baseline thickness index and BNP levels. The remodeling process was evidenced at follow up with the increase of BNP levels (r=0.447, p=0.17) and at follow up (r=-0.703, p=0.05). The EF, wall motion index (WMI) and LV end-systolic volume index were not predictive for late diastolic remodeling.

**Conclusion:** Tissue Doppler Imaging is a feasible and non-invasive method to predict late diastolic remodeling.

666 Comparative usefulness of myocardial velocity gradient and tissue Doppler imaging in detecting ischemic myocardium by dobutamine stress challenge in patients with single vessel coronary artery disease
K. El-Moayyad, G. El-Shahid, M. Mahdi, M. Fahmy, N. El-Mahallahi. Ain Shams University, Cardiology Department, Cairo, Egypt

**Background:** Tissue Doppler imaging is a new quantitative technique for identification of CAD. It improves the results of DSE in less expert readers. However, increased translational motion during a dobutamine challenge may affect the results of the endocardial velocities. Myocardial velocity gradient (MVG) is an indicator of regional wall-motion independent of external motion.

**Objectives:** We sought to assess the clinical significance of MVG in detection of ischemic myocardium in patients with single vessel disease.

**Methods:** We studied thirty patients with confirmed single vessel coronary artery disease by angiography. They were randomized into two groups: group I – artery stenosis <70%, group II – artery stenosis >70%.

**Results:** Regional wall-diastolic dysfunction was assessed by TDE one day before (exam 1), 2 days after successful dobutamine protocol, we measured the systolic & diastolic endocardial velocities at rest and at high dose dobutamine. We measured the MVG at rest, low dose (10µg/kg/min) and at high dose (30µg/kg/min) dobutamine. Results: While pulsed wave TDI could detect statistically significant difference in the systolic velocities in the ischemic basal & mid territories at rest, it failed to detect statistically significant difference between the ischemic & non-ischemic territories in the systolic velocities at peak stress. There was no statistically significant difference between the ischemic & non-ischemic territories at peak stress except in the inferior and posterior walls that showed significant decrease in the ischemic territories velocity. So PW-TDI could differentiate between the ischemic and non-ischemic territories in the systolic velocities at peak stress. These findings indicate that in patients with first acute myocardial infarction we aimed to determine and evaluale myocardial strain echocardiographic parameters. Predicting cardiac remodeling process in patients with the first myocardial infarction.

667 Association between left ventricular hypertrophy and prognosis in patients with acute myocardial infarction undergoing successful reperfusion
C. Papadopoulou, G. Giannakoulas, T. Zoglinsa, E. Dalimaga, H. Grissas, H. Karvounis, G. Parharidis, G. Louridas, Ahcens University Hospital, 1st Cardiology Department, Thessaloniki, Greece

**The association of left ventricular hypertrophy (LVI) and adverse prognosis in patients following acute myocardial infarction (AMI) remains controversial. The ratio of early transmural flow velocity (E) to early diastolic mitral annulus velocity (E/E') and plasma B-Type Natriuretic Peptide (BNP) are associated with elevated left ventricular (LV) filling pressures and share a well documented prognostic value in AMI patients. The present study was designed to estimate the association of LVI with LVI and BNP in the setting of AMI.**

**Methods:** Fifty-five patients (mean age 58±12, 48 males, mean Ejection Fraction was determined echocardiographically, with throrhytmia, angina or surgery, comprised the study popula-

**Conclusion:** LVI is associated with elevated LV filling pressures early after reperfusion in AMI patients with a relative preserved systolic function and may represent an independent risk factor in this specific cohort of patients. Having no major effect on systolic performance and on LV geometry, this effect may be attrib-

668 Assessment of regional left ventricular diastolic function in patients with preserved systolic function before and after angioplasty-TDE study
A. Klisiewicz, P. Michalek, A. Witkowski, P. Hofmann. Warsaw, Poland

**Objective:** Distortion of left ventricular diastolic function is an early sign of ischemia. Tissue Doppler Echocardiography (TDE) allows regional assessment of diastolic function. To assess the influence of coronary angioplasty (CA) on regional diastolic function, we compared changes of endo and diastolic parameters in patients before and after angioplasty by means of TDE.**

**Methods:** Studied group comprised 31 males and 9 females (age 49±8.68, 6 y), who preserved systolic function, aged for CA. Vergs were assigned into two groups: group I – artery stenosis <70%, group II – artery stenosis >70%.

**Results:** Regional wall-diastolic dysfunction was assessed by TDE one day before (exam 1), 2 days after successful dobutamine protocol, we measured the systolic & diastolic endocardial velocities at rest and at high dose dobutamine. We measured the MVG at rest, low dose (10µg/kg/min) and at high dose (30µg/kg/min) dobutamine. Results: While pulsed wave TDI could detect statistically significant difference in the systolic velocities in the ischemic basal & mid territories at rest, it failed to detect statistically significant difference between the ischemic & non-ischemic territories in the systolic velocities at peak stress. There was no statistically significant difference between the ischemic & non-ischemic territories at peak stress except in the inferior and posterior walls that showed significant decrease in the ischemic territories velocity. So PW-TDI could differentiate between the ischemic and non-ischemic territories in the systolic velocities at peak stress. These findings indicate that in patients with first acute myocardial infarction we aimed to determine and evaluale myocardial strain echocardiographic parameters. Predicting cardiac remodeling process in patients with the first myocardial infarction.

**Conclusion:** Detecting the mean MVG with sub-maximal dobutamine protocol would be a very safe and sensitive method of detecting ischemic myocardium in patients with single vessel disease.