Results: The PW-DTE interrogation of regional LVEF showed significant contraction dysfunction in the infarcted area, and non-dysfunctional segments of left ventricle (anterior versus inferior wall, septum versus inferior wall) despite normal LV EF and lack of intraventricular conduction disturbances (table 1).

Table 1

<table>
<thead>
<tr>
<th>LV wall</th>
<th>basal segment</th>
<th>medial segment</th>
</tr>
</thead>
<tbody>
<tr>
<td>anterior wall</td>
<td>54.2±7.07ms</td>
<td>34.12±5.4ms</td>
</tr>
<tr>
<td>inferior wall</td>
<td>34.12±5.4ms</td>
<td>34.12±5.4ms</td>
</tr>
<tr>
<td>interventricular septum</td>
<td>51.42±6.7ms</td>
<td>51.60±6.4ms</td>
</tr>
</tbody>
</table>

1 - echocardiographic LV wall segments, 2 - non-echocardiographic LV wall segments, *significant difference between the selected values (p-value<0.05), †basal segment of anterior wall vs basal segment of inferior wall, ‡significant difference between the selected values (p-value<0.05), ‡medial segment of anterior wall vs medial segment of interventricular septum

Conclusions: Patients with stable ischaemic heart disease may present significant LV regional contractile dysfunction as measured by PW-DTE despite the preserved global systolic LV function and absence of intraventricular conduction disturbances.

174 Prediction of major adverse cardiovascular events after acute myocardial infarction: new echocardiographic parameters

N. Cizer 1, B. Kaya 2, E. Ozturk 2, A. Atila 2, B. Aksoy 2, K. Ovunc 2, F. Ozmen 2, S.S. Kes 2, Ankara, Turkey; 2Hacettepe University Medical School, Cardiology Dept., Ankara, Turkey

Background: Major cardiovascular adverse events (MACE) following acute myocardial infarction (AMI) are responsible for most of the cardiac deaths. Therefore identification of AMI patients with high risk of developing major adverse cardiac events has critical importance. We aimed to determine and evaluate the Doppler echocardiographic and myocardial strain echocardiographic parameters for predicting MACE after AMI.

Methods: Seventy-one patients (55 male, mean age: 59±12) with first acute ST segment elevated myocardial infarction were studied. Conventional echocardiography with pulsed and color tissue Doppler and mitral color M-mode imaging was performed during initial hospital admission. Peak systolic myocardial velocities (Sm) 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. Mean mitral annular systolic motion (MAS) value was calculated from these sites. EGP and E/E' values, which were derived from transmural flow velocities, tissue Doppler and mitral color M-mode flow propagation velocities were calculated. Left ventricular myocardial systolic longitudinal strain values were measured from 12 segments (apical 2 and 4 chamber loops), and a mean value was calculated from these measurements. A composite endpoint of repeat revascularization, non-fatal myocardial infarction and cardiovascular death was used as MACE. Patients were followed for 6 months.

Results: A total number of 17 AMI patients had MACE. There was no difference in E/E' (MACE+ : 11.78±1.9 vs MACE- : 11.7±2.1, p = 0.693), EGP (MACE+ : 5.5±5.2 c/s vs MACE- : 5.5±0.2 c/s, p = 0.9), mean myocardial systolic longitudinal strain (MLS) (MACE+ : -11±0.95% vs MACE- : -11.7±0.35%, p = 0.011). A cut off value of mean myocardial systolic longitudinal strain = -9.98% had a sensitivity of 53%, specificity of 87% in predicting MACE in patients with acute myocardial infarction.

Conclusions: These findings indicate that in patients with acute myocardial infarction; mean systolic longitudinal strain parameters predict major cardiovascular adverse events.

175 May post-systolic motion during dobutamine stress echocardiography predict the functional recovery of dysfunctional myocardium after successful percutaneous coronary revascularization?

Y.S. Lee 1, K.S. Kim 2, C.W. Nam 2, S.W. Han 2, S.H. Hur 2, Y.N. Kim 2, K.B. Kim 2, Dae-Gu, Korea, Republic of

Purpose: Doppler myocardial imaging (DMI) has been suggested as a method of quantifying induced ischemia during dobutamine stress echocardiography (DSE). Post-systolic-motion (PSM) detected by DMI is related with peri-infarct ischemia at rest. We hypothesized that PSM during DSE would predict functional recovery of dysfunctional myocardium after successful percutaneous coronary intervention (PCI).

Methods: Among 50 patients with dysfunctional myocardium on left anterior descending coronary artery (LAD) territory, we divided into two groups according to the improvement of wall motion score index (WMSI) on LAD territory at 6 months after successful PCI on LAD, and evaluated DMI on the LAD territory during DSE in both improved WMSI (1.42±0.39) patients and 15 never changed WMSI (1.76±0.46) patients at 1 month after PCI. Myocardial velocity data were measured in the basal, mid, apical segments, and basal anterior segment of LAD territory. PSM was defined as positive wave, which appeared after the curve of systolic ejection had reached the zero line. Results: There was no difference of resting PSM in both groups. However, PSM during DSE was significantly higher in improved WMSI group than in no change group.

Results: We suggest that PSM during DSE would predict functional recovery of dysfunctional myocardium after successful PCI on LAD.
178 Left ventricular volume and viability but not transmural extent of scar determine LV remodeling and exercise capacity responses to revascularization and medical therapy in patients with LV dysfunction
University of Queensland, Dept. of Medicine, Brisbane, Australia

Myocardial revascularization (RVS) is known to improve LV remodeling and exercise capacity in selected pts. We sought the relative impact of baseline LV volume, viable myocardium (VM) and transmural extent of scar (TME) on these phenomena.

Methods: We recruited 84 pts with LV dysfunction after myocardial infarction. At baseline, VM was identified as contractile reserve with dobutamine echo and TME was measured by the proportion of the LV wall showing late uptake on gadolinium MRI, also expressed as TME score (sum of segmental scores ranging from 0 to 100%) (100% = full transmural extent of scar). Baseline measurements of MRI and VO2 were compared with 12 month follow-up.

Results: In 33 pts (63±10 y; 27% with VM) undergoing RVS, baseline EDV was 160±50 and decreased by 55% (p<0.01). Baseline modeling was predicted by VM segts and baseline EDV (Table). In RVS, baseline VO2 was 13±3 ml/kg/min and increased by 2±2±%; change in functional capacity was associated with extensive (>50%) viable segts. Medical therapy was continued in 51 pts (63±10 y; 43%) in whom baseline EDV was 19±4 ml/kg/min. Remodeling was predicted by VM segts and baseline EDV (Table). In the medical group, baseline VO2 was 15±5 ml/kg/min and deteriorated by 12±3±%.

Conclusions: RVS and medical therapy have opposite effects on volume change, increasing EDV is associated with less viability and greater baseline EDV, but not dependent on scar extent. Changes in exercise capacity are dependent on revascularization of extensive VM.

179 Patterns of left ventricular volume changes after myocardial infarction. Clinical implications
B. Brzezinska, K. Loboz-Grudzien, L. Sokalski
University of Queensland, Dept. of Medicine, Brisbane, Australia

Background: Left ventricular dilatation (LVOD) is the dominant form of postinfarction remodeling. This feature is dynamic, heterogeneous and not necessarily progressive. The aim of the study was to assess the clinical implications (heart failure (HF), revascularization (RVS), wall motion abnormalities (WMA)) of different patterns of LV volume changes in RVS patients with MI, from 1-12 months follow-up after myocardial infarction (MI) and to determine early predictors of adverse remodeling.

Methods: The study group consisted of 132 pts (mean age 55±12 years) with their first STEMI (67% pts were treated with fibrinolysis) the consecutive ECHO examinations were performed: 5±1 day, 3±6 days, 3±6 months, 1±1 year after MI. The following parameters were assessed: WMSI, infarct expansion (Exp), EDVI, ESVI, EF, LV spherical index (WSP), restrictive pattern of mitral flow (RM), mitral regurgitation (MR). The criterion of significant LVOD was: EDVI>85ml/m2 or TME increase of EDVI>20%, between two succeeding ECOH. Pts were classified into: Gr.1 with no LVOD (n=68), Gr.2 with early transient LVOD (S1 and/or S2) (n=26) and Gr.3 with progressive (S1, S2, S3) LVOD (n=38). The prognostic value of the following parameters was assessed: infarct location, Qionom-Q, lack of nonischemic adverse repopulation, Regional EF (Exp), EF S1<40%, EF S2<35%, RVSP, Exp/r, baseline LV hypertrophy.

Results: Gr.3 (21% pts) had significantly larger infarct size (WMSI, CK) than Gr.1 (p<0.01) and Gr.2 (p<0.05). Exp occurred only in Gr.1. 1 year after MI adverse remodeling was observed in 51.8% pts and was associated with lower EF (<0.001), more spherical LV (WSP) (p<0.001) and higher rate of MI+1 (p<0.001) compared to Gr.1 and Gr.2. However, in each group EF was stable in 1-year follow-up. HF was significantly higher in Gr.3 than in Gr.2 and Gr.1 - respectively: 57% vs 4% vs 2% (p<0.001). EF CD occurred only in Gr.3 (36±15%). The Cox regression analysis showed that LVOD=80ml/m2 at discharge was the most powerful, independent predictor of progressive LVOD. Large infarct size was the most powerful, independent predictor of adverse remodeling.

Conclusions: During the first 6 months after MI the progression of the LVOD was the useful sign identifying late adverse postinfarction remodeling, even in the absence of significant hemodynamic changes, and was associated with highest rate of clinical events (HF, CD). 2. Increased EDVI>80ml/m2 at discharge, but no large infarct size, was the most powerful, independent predictor of adverse remodeling.