of dysfunctional segments/patient (11.4±2.0 vs 11.0±2.0), global wall motion score index (WMSI): 2.37±0.36 vs 2.12±0.42), and ejection fraction (EF: 29±5% vs 35±6% p<NS). However, in patients with RF pattern the number of segments showing contractile response to dobutamine (3.50±2.4 vs 6.63±2.59; p<0.01) and the percent contractile reserve (31±22% vs 60±22%; p=0.0001) were lower compared to NRF patients, and WMSI at peak dobutamine infusion higher (1.93±2.4 vs 1.60±3.96; p=0.05), indicating reduced contractile reserve in patients with impaired diastolic filling. Across all patients there was also a positive correlation between the number of segments showing contractile reserve and both isovolumetric relaxation time (r=0.4; p<0.0001), and deceleration time of peak E-E' velocity (r=0.56; p<0.001). After revascularization, LVEF increased by 11±5% in patients with NRF by but only 4±3% in patients with RF pattern (p<0.05). Also, in patients with NRF compared to RF pattern, function recovered in 4.22±4.0 segments vs 1.75±3.0, and WMSI improved by 0.44±0.42 by vs 0.33±0.40 (p<0.05), respectively.

Conclusions: In patients with hibernating myocardium, impaired diastolic filling is associated with reduced contractile reserve; restrictive filling pattern may also predict poor recovery of function after revascularization.

302-2 Dobutamine Versus Levosimendan Stress Echocardiography for the Prediction of Recovery of Left Ventricular Dyssynergies After Revascularization

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Background: Levosimendan is a new calcium-sensitizer agent with inotropic and diuretic properties. Although it is used as an inotropic agent in decompensated heart failure showing comparable efficacy to the other inotropic drugs, it has not been in use stress echocardiography yet. The purpose of our study was to compare the accuracy of levisimendan (LSE) and dobutamine stress echocardiography (DSE) for the prediction of recovery of left ventricular (LV) dyssynergies after revascularization.

Methods: Twenty eight patients with LV dysfunction due to previous myocardial infarction scheduled for revascularisation (18 coronary angioplasty and 10 bypass surgery) underwent low-dose DSE (5-10µg/kg/min) and LSE. Levosimendan was infused at least 1 hour after dobutamine infusion, at 2 doses of 12 and 24µg/kg, over a 5 minutes period. Each LV wall motion score was assessed using a 16-segment model. Myocardial viability was determined if improvement of ≥1 grade of regional wall motion score in at least two contiguous segments was noted, during either dobutamine or levosimendan infusion. All patients also underwent resting echocardiography within 6 months after successful revascularization.

Results: No major adverse events occurred during levosimendan or dobutamine administration. Of the 448 segments studied, 212 (47%) were dysynergic at rest. Dobutamine resulted in improved ventricular function in 233 (52%) abnormal segments while 88 (90%) of them showed functional improvement after levosimendan. During LSE 110/220 (52%) dysfunctional segments improved and 101 (81%) of them recovered function after revascularization. Analysis of results showed a significantly lower sensitivity of DSE compared to LSE (73% Versus 94% respectively, p<0.01) but a similar specificity (88% Versus 90% respectively, p=NS) for the prediction of the recovery of LV dysynergies after revascularization.

Conclusions: Levosimendan can be used safely in stress echocardiography. Furthermore, LSE seems to predict postrevascularization recovery of LV dysfunction with higher accuracy than DSE.

9:45 a.m.

302-3 Comparative Long-Term Prognostic Value of Dobutamine Stress Echocardiography Versus Dobutamine Stress Myocardial Perfusion SPECT

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Objectives: The purpose of this study was to compare the long-term prognostic value of dobutamine stress echocardiography and dobutamine stress single photon emission computed tomography (SPECT).

Background: Dobutamine stress echocardiography and dobutamine stress SPECT are clinically useful methods for the detection of coronary artery disease. The comparative long-term prognostic value of these imaging modalities is not clear.

Methods: A total of 364 consecutive patients underwent simultaneous dobutamine stress 99mTc-sestamibi SPECT and dobutamine stress echocardiography. Follow-up was successful in 351 (99.2%) patients. Fifty patients underwent early (<60 days) revascularization. Of the 448 segments studied, 212 (47%) were dysynergic at rest. Dobutamine infusion resulted in augmented contractile reserve in 98/212 (46%) abnormal segments while 88 (90%) of them showed functional improvement after levosimendan. During LSE 110/220 (52%) dysfunctional segments improved and 101 (81%) of them recovered function after revascularization. Analysis of results showed a significantly lower sensitivity of DSE compared to LSE (73% Versus 94% respectively, p<0.01) but a similar specificity (88% Versus 90% respectively, p=NS) for the prediction of the recovery of LV dysynergies after revascularization.

Conclusions: Dobutamine stress 99mTc-sestamibi SPECT as well as dobutamine stress echocardiography provide comparable, powerful, long-term prognostic information over clinical data.

10:00 a.m.

302-4 The Doppler Tei Index During Dobutamine Stress Echocardiography: A Powerful Predictor of Mortality After Acute Myocardial Infarction

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Background: Myocardial viability can be detected by stressful wall motion analyses during dobutamine stress echocardiography (DSE). However, not only systolic but also diastolic left ventricular function has a potential of improvement after acute myocardial infarction (AMI). Therefore, we hypothesized that the Doppler Tei index of combined systolic and diastolic performance (sum of isovolumic relaxation and contraction times divided by ejection time) obtained during DSE could provide prognostic information beyond conventional systolic wall motion analyses.

Methods: In 162 consecutive patients with first myocardial infarction DSE (10 µg/kg/min) was performed 16 ± 6 hours after hospital admission. Delta Tei index was calculated as the change in Tei index from rest to DSE.

Results: During follow-up of 25 ± 11 months, 33 patients (20 %) died. Delta Tei index was significantly higher in survivors than in patients dying (0.05 ± 0.09 versus -0.08 ± 0.11, p<0.001). Mortality rate was significantly lower in patients with delta Tei index above the median (0.03), p<0.001 (Figure). In a multivariate Cox regression model, delta Tei index (chi-square = 8, 1 < p < 0.004) added prognostic information above and beyond age, Killip class, an admission, ejection fraction, mitral deceleration time < 140 ms, and infarct zone viability.

Conclusions: Tei index obtained during DSE is a powerful predictor of mortality after AMI and provides prognostic information incremental to conventional stress echocardiographic data.

10:15 a.m.