706 The assessment of myocardial perfusion improves the prognostic value of dipyridamole stress echocardiography.

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Myocardial perfusion can be visualized during contrast echocardiography but the prognostic usefulness of this approach is yet unsettled. We performed a prospective study of a group of patients (pts) studied with high-dose dipyridamole stress echocardiography (DSE) with contrast myocardial perfusion imaging (MPI). Methods: 87 consecutive pts admitted for diagnosis of chest pain (24 females, 63 males, age 56 ± 8, height 170cm, weight 79kg) underwent DSE with MPI at baseline and peak stress (triggered harmonic imaging 1.5, repeated bolus of Opisolon 0.3-0.5ml, visual assessment by consensus of 2 experienced observers) and coronary angiography. Patients were prospectively followed-up with respect to mortality, revascularization, infarction and unstable angina (UA) for a period of 518 ± 155 days, range 90-940. The prognostic value of resting (r) and inducible (i) wall motion abnormalities (WMA) and perfusion defects (CPD) was compared. Results: Events occurred in 48 pts (5 deaths, 2 infarctions, 14 UA and 41 revascularizations). Mortality was thus low and poorly predicted by WMA or CPD separately, but test with inducible WMA and CPD carried a hazard ratio HR=7.0 (p=0.037) and negative predictive value 97%. Event-free survival was predicted by absence of r-WMA (HR=0.48, p=0.0099) and even better by absence of i-CPD (HR=0.45, p=0.0093) and best by absence of any inducible abnormality (HR=0.44, p=0.0031) negative and positive predictive value 71% and 67%.

Conclusions: Even using simple triggered harmonic imaging and visual assessment, MPI enhances the prognostic value of DSE in patients undergoing diagnostics for chest pain. Normal dual test optimally predicts low mortality in 17-months follow-up.

707 Prognostic value of dobutamine stress echocardiography in patients with previous coronary revascularization.

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Objectives: The aim of this study was to assess the prognostic value of dobutamine stress echocardiography (DSE) in patients with previous myocardial revascularization. Methods: A total of 332 consecutive patients with previous percutaneous or surgical coronary revascularization underwent DSE. Follow-up was successful in 331 (99.7%) patients. Thirty-eight patients who underwent early revascularization (>3 months) after the test were excluded from analysis. Cox proportional-hazards regression models were used to identify independent predictors of the composite of cardiac events (cardiac death, nonfatal myocardial infarction and late revascularization). Results: During a mean of 24 ± 20 months, 37 (13%) patients died, and 89 (30%) had at least one cardiac event (21%) cardiac deaths, 11% non-fatal myocardial infarctions, and 68% late revascularizations. In multivariate analysis of clinical data, independent predictors of late cardiac events were hypertension (hazard ratio [HR]: 1.7, 95% confidence interval [CI]: 1.1-2.6), and congestive heart failure (HR: 2.1, 95% CI: 1.3-3.2). Reversible wall motion abnormalities (ischemia) on DSE were incrementally predictive of cardiac events (HR: 2.1, 95% CI: 1.3-3.2).

Conclusions: Myocardial ischemia during DSE is independently predictive of cardiac events in patients with previous myocardial revascularization, after controlling for clinical data.

708 QT dispersion correlates to myocardial viability assessed by dobutamine stress echocardiography in patients with ischemic cardiomyopathy.

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Objectives: QT dispersion is prolonged in numerous cardiac diseases, representing a general repolarization abnormality. Our aim was to evaluate the influence of viable myocardium on QT dispersion in patients with ischemic cardiomyopathy. Methods: A total of 103 patients with chronic coronary artery disease and poor left ventricular ejection fraction (LVEF: 25-65%), range: 10 to 35% were studied. Patients underwent 12-lead electrocardiography to assess QT and rate-corrected (QTc) dispersions, and 2-dimensional echocardiography to identify segmental dysfunction. Dobutamine stress echocardiography (DSE) was then performed to detect residual viability. A patient was classified as viable in the presence of ≥ 4 dysfunctional viable segments. Results: Resting echo demonstrated 1260 dysfunctional segments; of these, 476 (38%) were viable. Sixty-two (60%) patients had substantial viability (≥ 4 viable segments on DSE). QT dispersion was lower in these patients, than in patients without viability (55 ± 17 ms vs. 65 ± 22 ms, P = 0.012). The number of viable segments significantly correlated to QT dispersion (r = 0.333, P = 0.001)(see Figure). In contrast, there was no correlation between LVEF and QT dispersion (r = 0.001, P = NS). Results for QTc dispersion were comparable.

Conclusions: QT dispersion correlates significantly to the number of viable segments assessed by DSE. Patients with ischemic cardiomyopathy and a low QT dispersion probably have a substantial amount of viable tissue. Conversely, in patients with a high QT dispersion the likelihood of substantial viability is reduced.

709 Pronostic value of exercise echocardiography in diabetic patients with known or suspected coronary artery disease.

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Coronary artery disease (CAD) is the leading cause of death in diabetic patients (pts). Currently there is a lack of data regarding to the value of exercise echocardiography (EE) for prognostic risk stratification in these pts. The aim of this study was to determine the prognostic value of EE in diabetics. Methods: 214 consecutive diabetic pts (mean age 64 ± 8 years, 130 men) with known or suspected CAD who were referred for treadmill EE were included. Follow-up (F-U) data were obtained by reviewing clinical history and telephonic interview. Of the 214 pts, F-U data was available in 207 (97%). Results: Cardiac events during a F-U of 44 ± 16 months occurred in 48 pts: unstable angina in 22, nonfatal myocardial infarction in 7 and cardiac death in 19. A total of 52 pts underwent revascularization, 40 because of the result of EE and 12 after a later event. Ischemia was detected in 104 pts (50%) by EE (LV wall motion score index impairment at exercise) and in 69 pts (33%) by exercise ECG (p = 0.001). Total cardiac event and cardiac death rate at F-U were lower in the 103 pts without ischemia on EE (49%) than in the 104 pts with ischemia (51%): total cardiac event: 15% vs 31%, p = 0.01; cardiac death: 3% vs 10%, p = 0.01. Previous myocardial infarction (OR: 1.83, 95% CI: 1.02-3.27, p = 0.04) maximal workload (OR: 0.84, 95% CI: 0.75-0.94, p = 0.01), insulin dependent diabetes (OR: 1.95, 95% CI: 1.09-3.48, p = 0.02) and ischemia detected on EE (OR 2.14, 95% CI: 1.16-3.94, p = 0.01) were independent risk factors for predicting cardiac events by multivariate Cox’s analysis. Ischemia detected on EE (OR: 5.39, 95% CI: 1.56-18.59, p = 0.01) and insulin dependent diabetes (OR: 3.34, 95% CI: 1.34-8.34, p = 0.01) were independent risk factors for the prediction of cardiac death. Conclusions: Ischemia detected by EE is an independent predictor of cardiac events and death in diabetic patients with known or suspected CAD.