the distal LAD was measured by TI'DE both at rest and during intravenous infusion of logical severity of coronary narrowing due to restenosis after PCI. This method has pos-
patients with CFVR32. Of these 51 patients, TI-201 SPECT confirmed reversible perfu-
sion computed tomography (SPECT) as a physiological diagnostic of restenosis. The
measurement by TTDE. Methods: We studied consecutive 53 patients six months after
coronary artery stenosis. However, feasibility of this method in diagnosing restenosis has
thoracic Doppler echocardiography ('I-I'DE) is useful for the physiologic assessment of Teragaki, Junichi Yoshikawa,
Background and Purpose: Coronary flow echo is an established technique for the diagnosis of CAD. However, risk stratification and prognosis using stress echo are not defined.

Methods: We evaluated 1425 pts (59±13 yrs, 51±11% male) undergoing stress echo (34±
treadmill, 66% dobutamine). Resting left ventricular ejection fraction (LVEF) and regional wall motion was assessed by consensus of 2 readers. LV was divided as standard 16-
segment model, 5-point scale for wall motion. Peak wall motion score indexed (WMSI) fol-
lowing stress was derived from cumulative sum of score of 16 segments divided by number of visualized segments. 1 year followup (mean 2.6±0.9 yrs) for confirmed myocardial infarc-
tion (n=11) and cardiac death (n=14) were obtained.

Results: By univariate analysis, peak WMSI (p<0.001) and LVEF (p<0.001) were signi-
ficant predictors of cardiac events. Peak WMSI effectively risk stratified pts into low (0.7%), intermediate (3.1%) and high risk (5.3%) groups for cardiac events (p<0.001).

An LVEF threshold of 40% provided further risk stratification of mild to moderately (WMSI=1.1-1.7) and markedly (WMSI>1.7) abnormal studies [graph], in a multivariate logistic regression model. LVEF superseded peak WMSI as the best independent predic-
tor of cardiac events (p=0.0035).

Conclusions: Stress echo yields incremental prognostic information for risk stratification of pts. A normal stress echo (peak WMSI=1.0) confers a benign prognosis (0.7% event rate).
Peak WMSI>1.7 and LVEF<40% are independent markers of poor prognosis.

Noninvasive Diagnosis of Restenosis by Transhoracic Doppler Echocardiography After Percutaneous Coronal Intervention: Comparison With 201-TI SPECT
Kumiko Higasa, Hiroyuki Watanabe, Ryo Otsuka, Takashi Muro, Masakazu

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The Effect of Dobutamine Stress on Ejection and Filling Hemodynamics in Dilated Cardiomyopathy
Alain Duncan, Christine O'Sullivan, Michael Hensen, Derek Gibson, The Royal Brompton Hospital, London, United Kingdom.

Aim: To study the effect of pharmacological stress on ejection and filling times in patients with dilated cardiomyopathy (DCM) and impaired activation.

Methods: 59 DCM patients were studied during dobutamine stress: 34 ischemic DCM (20 normal activation, IdDCM-LBBB, 14 left bundle branch block, 10 IdDCM-NA) and 25 idiopathic DCM (15 IdDCM-NA and 10 IdDCM-LBBB). LV ejection and filling times were assessed using dobutamine echocardiography (expressed in ms).

Results: In IdDCM-NA, ejection and filling times increased with stress (19±2.4±6.4, and 23±4 to 31±5 s/min respectively, both p<0.005), so that total isovolumic period (TIP) fell (13 to 6 s/min, p<0.001). With stress, ejection and filling times increased (18±2.2±1.1 to 22±3±2.4, and 23±4 to 27±4 s/min respectively, both p<0.005), so that TIP fell (20 to 11 s/min, p<0.001). The fall in TIP correlated with QRS shortening (IdDCM-NA: 99±8 to 95±14 ms, p<0.01, IdDCM-LBBB: 164±14 to 156±14 ms, p<0.01, r=0.91). Ejection and filling times were similar in IdDCM-NA compared to IdDCM-LBBB. Resting time did not change with stress, and although ejection time increased (20±2 to 22±2 s/min, p<0.005), TIP (11 s/min at rest) fell to zero in IdDCM-LBBB. Ejection and filling times were shorter at rest than IdDCM-NA (18±3 s/min, p<0.01, and 24±4 s/min, both p<0.01) and neither increased with stress. At peak stress TIP was 20±2 s/min longer than IdDCM-LBBB and 11±1 s/min longer than IdDCM-NA, both p<0.001). QRS duration broadened in IdDCM-NA (96±12 to 102±12 ms, p<0.01), but did not change in IdDCM-LBBB. There was no correlation between QRS and TIP in either ischemic group. Conclusion: In IdDCM, LBBB reduces the time available for ejection and filling at rest. In IdDCM, QRS shortening is associated with a fall in the isovolumic period at peak stress, irrespective of resting activation. By contrast, in IdDCM, the isovolumic period is unaltered during stress. When coronary disease and LBBB are combined, one-third of the cardiac cycle at peak stress is neither ejection nor filling, which may explain the impaired cardiac output response to tachycardia in these patients.

Histological Differentiation Associated With Functional Differentiation Identified With Dobutamine Stress in a Pig Model of Chronic Ischemia
Monika Szilard, Xiaoshun Liu, Yanming Huang, Eric Verbeken, Frans Van De Wael, Ivan AI-Mallah, Omar Obeidat, Karthik Ananthasubramaniam, Mohsin Alam, Muhammed Arida, Mouaz De Scheerder, University Hospital Gasthuisberg KU Leuven, Leuven, Belgium.

Dobutamine stress (DSE) is a standard method used to detect myocardial viability in patients with chronic LV dysfunction. The aim was to quantify the histologic changes in DSE induced responses in "at-risk" chronic dysfunctional myocardium (CDM).