

98 patients (24%) and DOB was positive in 35 patients (27%). Three groups of patients were identified: Group 1 = negative test; Group 2 = positive test at high dosage (0.84 mg/kg for DIP and ≥ 30 $\mu\text{g/kg/min}$ for DOB); Group 3 = positive test at low dosage (0.56 mg/kg for DIP and ≤ 20 $\mu\text{g/kg/min}$ for DOB). Coronary angiography was performed in 43/393 (11%) of Group 1, in 59/105 (56%) of Group 2 and in 25/28 (89%) of Group 3.

Patients were followed-up for 18 ± 10 months. There were 11 events in Group 1 (1 death, 2 myocardial infarction, 5 unstable angina, 3 revascularization); 22 Group 2 (3 death, 5 myocardial infarction, 1 unstable angina, revascularization) and 19 in Group 3 (3 death, 1 unstable angina, revascularization).

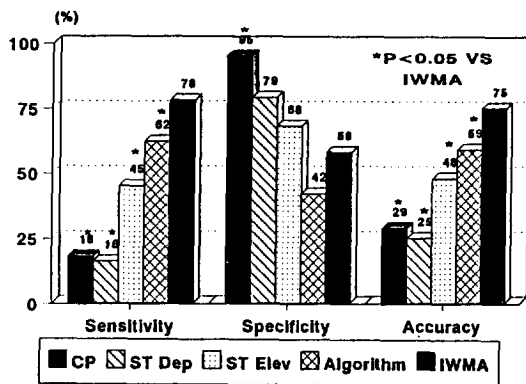
Stress-echo showed a negative predictive value of 97.2% with a positive predictive value which was significantly higher ($p < 0.05$) for low dose positivity (67.8%) in comparison with high dose positivity (21%).

Conclusion: these results show that stress-echo has an high negative predictive value; the positive predictive value of stress-echo is limited but rises sharply when low dose positivity is considered. In the context of limited economic and organising resources, this technique allows an accurate selection of patients to be proposed for coronary angiography and for revascularization procedures.

905-56 Dobutamine Stress Echocardiography in the Detection of Significant Stenosis of the Infarct Related Artery Following Acute Myocardial Infarction: Comparison of Wall Motion Changes, Symptoms, and ECG Changes

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Patency of the infarct related coronary artery (IRA) following acute myocardial infarction (MI) has prognostic implications. The noninvasive detection of IRA stenosis, however, has remained a problem. The objective of this study was to determine the relative accuracy of chest pain, ECG changes, and an inducible wall motion abnormality within the infarct zone (IWMA) during dobutamine stress echocardiography (DSE) to detect significant IRA stenosis. DSE (peak dose 25 ± 10 $\mu\text{g/kg/min}$, peak heart rate 109 ± 21 bpm) and coronary angiography were performed on 130 patients (mean age 56 ± 12 years, 107 males) with MI. IRA stenosis $\geq 70\%$ was noted in 111/130 (85%) patients. Thrombolysis was used in 90/130 (69%) patients. Chest pain during DSE was noted in 21/130 (16%), ST elevation in 56/130 (43%), ST depression in 22/130 (17%), algorithm of chest pain/ECG changes in 79/130 (61%), and IWMA in 95/130 (73%).



While chest pain and ECG changes were specific, an inducible wall motion abnormality within the infarct zone during DSE was the most accurate means for identifying significant stenosis of the infarct related artery following acute myocardial infarction.

905-57 Viability by Dobutamine Echocardiography Identifies Patients Whose Outcome is Improved by Elective Revascularization After Acute Myocardial Infarction

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Patients with viable myocardium and residual stenosis after acute myocardial infarction (MI) may benefit from elective early revascularization. To determine whether echocardiographic viability identifies the patients whose outcome is improved by elective early revascularization, 140 patients (age 57 ± 13 yrs, 116 males, 24 females) underwent low dose dobutamine echocardiography ($5-10$ $\mu\text{g/kg/min}$) at 5 ± 2 days after acute MI and were followed for > 1 year. Sixty-three patients had anterior infarction and 97 were treated with

thrombolytic therapy. Sixty-one patients were electively revascularized (50 angioplasty, 11 bypass surgery). Echocardiographic images were analyzed according to the standard 16 segment model and viability defined as akinesis unresponsive to dobutamine in ≥ 3 infarction zone segments. Eighty-four patients were identified as viable. Clinical, echocardiographic and angiographic data were similar in revascularized and nonrevascularized patients. Adverse outcome occurred in 52/140 patients (cardiac death 6, nonfatal MI 9, sustained ventricular tachycardia 3, heart failure 8, unstable angina 26). The incidence of adverse outcome in our four groups was as follows:

	Revascularized	Medical
Viable	10% (4/39)*	27% (12/45)
Nonviable	77% (17/22)†	56% (19/34)‡

*p = 0.05 vs medical, †p < 0.001 vs viable, ‡p < 0.05 vs viable

In conclusion, adverse outcome was significantly greater ($p < 0.001$) in patients with echocardiographic nonviability. Revascularization improved clinical outcome only in patients with viable myocardium identified with dobutamine stress echocardiography.

905-58 Multivessel Disease by Dobutamine Echocardiography is as Predictive as Angiographic Multivessel Disease for Adverse Outcome After Acute Myocardial Infarction

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Multivessel coronary artery disease is a powerful predictor of adverse outcome after acute myocardial infarction. To determine whether multiple wall motion abnormalities during dobutamine echocardiography are as predictive as multivessel disease for adverse outcome, 72 medically treated patients (age 58 ± 13 yrs, 57 men, 15 women) underwent dobutamine echocardiography and coronary angiography at 5 ± 2 days after acute myocardial infarction and were followed for > 1 year. Forty-one patients had anterior myocardial infarction and 38 Q-wave infarction. Forty-six were treated with thrombolytic therapy. According to the criterion of $> 50\%$ luminal diameter stenosis, 43 patients had single vessel disease (1V), 20 two vessel disease (2V) and 9 three vessel disease (3V). According to the standard 16 segment model and vascular distribution, dobutamine echocardiography (peak dose 24 ± 11 $\mu\text{g/kg/min}$, peak HR 111 ± 20 bpm) identified one wall motion abnormality (1V) in 43 patients, two (2V) in 22 patients and three (3V) in 7 patients. Adverse outcomes occurred in 31 patients (cardiac death 5, nonfatal myocardial infarction 4, heart failure 5 and unstable angina requiring revascularization 17). Event rates were:

	1V	2V	3V
Angiography	30% (13/43)*	50% (10/20)	89% (8/9)
Dobutamine Echo	26% (11/43)*	64% (14/22)	86% (6/7)

*p < 0.05 versus multivessel disease

In conclusion, single vessel disease is predictive of good outcome. Multiple wall motion abnormalities by dobutamine echocardiography are as predictive as angiographic multivessel disease for adverse outcome after acute myocardial infarction.

905-59 Preoperative Dobutamine Stress Echocardiography Predicts Intra-operative Myocardial Ischemia in Patients Undergoing Aortic Surgery

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To assess the predictive value of dobutamine-atropine stress echocardiography (DSE) for intraoperative myocardial ischemia during aortic surgery, 32 pts. underwent preoperative DSE plus intraoperative transesophageal echocardiographic (TEE) and 12-lead ECG monitoring. The intraoperative investigators were unaware of preoperative DSE results.

Eight pts had a positive DSE (new wall motion abnormalities). Eight pts had a positive intraoperative TEE, associated with significant ECG changes in 6. None had a postoperative infarction. In 5 pts both preoperative DSE and intraoperative TEE were positive, involving the identical segments of myocardium in all. Thus 5/8 pts (63%) with a positive DSE had intraoperative ischemia, versus 3/24 (13%) with a negative DSE. Positive predictive value of DSE was 63%, negative predictive value 88%.

Three pts had intraoperative ischemia despite a negative preoperative DSE. In two of these three this occurred during hemodynamic perturbations that exceeded those during DSE. Three pts had no evidence of intraoperative

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