Conclusion: In this multicenter study, patients treated acutely with reperfusion therapy had a low post-discharge mortality rate. Despite this low mortality, this study provides independent confirmation of the previous single-center results – infarct size measured by quantitative Tc-99m sestamibi imaging at hospital discharge predicts subsequent mortality.

11:30

746-5 Quantitative Assessment of the Effects of Acute Ischemia on Myocardium in Unstable Coronary Artery Disease by Fatty Acid Metabolic Imaging

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Early assessment of post-ischemic and jeopardized myocardium in patients with unstable coronary artery disease, i.e. unstable angina (UA) and non-Q-wave MI (NQMI) is necessary to optimize the treatment. To examine whether I-123 beta-methyl iodophenyl pentadecanoic acid (BMIPP) can quantify the effects of acute ischemia on myocardium in patients with UA and NQMI, we compared quantitative BMIPP with serum troponin T (TnT) and creatine kinase MB (CK-MB) levels in 39 patients (mean 65 years, male/female = 30/9) with no previous MI. All pts admitted to CCU within 12 hr. after the onset of symptom. Blood samples were drawn at every 12 hr. for TnT and every 6 hr. for CK-MB during first 2 days. After stabilization of symptom by medical therapy, BMIPP and T1 were separately performed mean 4.4 days after onset. Polar map images of BMIPP and T1 were quantitatively compared to normal data. All patients had significant coronary artery disease (n = 34) or induced vasospasm (n = 5) documented by angiography performed within 6 days after onset. Twenty-four patients had elevated TnT levels (range 0.11–4.94 ng/ml). In 6 of other 15 patients, TnT was negative (<0.1 ng/ml) but persistent T wave inversion was observed. The sensitivity for detection of culprit- and vasospasm-induced lesion territories by BMIPP and T1 were 88% and 54%, respectively, $p < 0.003$). There was a significant correlation between peak TnT and MB levels and percent defect size by BMIPP ($r = 0.59$, $p = 0.004$ and $r = 0.52$, $p = 0.004$, respectively) but no correlation by rest T1 ($r = 0.18$, p = ns and $r = 0.20$, p = ns, respectively). In conclusion, rest BMIPP imaging has potential to locate the culprit-lesion or vasospasm-induced vessel territories and quantify the extent of post-ischemic or jeopardized myocardium in patients with UA or NQMI even after stabilization of symptom.

11:45

746-6 Is there Justification for Follow-Up Symptom Limited Exercise Myocardial Perfusion Studies Late Post Myocardial Infarction?

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It is common clinical practice to perform a pre-discharge low level (LL) myocardial perfusion study followed by a symptom-limited (SL) study, 4–8 weeks later, to risk stratify patients (pts) after myocardial infarction. The clinical utility of this practice was retrospectively evaluated by comparing pairs of LL and SL SPECT studies in 36 stable post-MI pts. Their age was 60 ± 10 years (mean ± SD) with 75% men. Time between studies was 54 ± 28 days (range 11–143) with no interval cardiac events or interventions. Thallium was used in 32 pairs and sestamibi in 4. SPECT studies were interpreted by two blinded observers using a 20 segment scoring system. *Results:*

	LL	SL	$p <$
% mphr achieved	64 ± 12	82 ± 13	0.001
Mets achieved	5.1 ± 1	8.5 ± 3	0.001
Total abnormal segments	185	194	NS
Mean abnormal segments/pt.	5.1 ± 2.9	5.4 ± 3.4	NS
# fixed defects	116 (63%)	82 (42%)	0.004
# reversible defects	64 (35%)	106 (55%)	0.002
# reverse redistribution	5 (2%)	6 (3%)	NS

There were no differences in β-blocker use (86% Vs 75%), clinical or EKG response to exercise, or presence of transient ischemic dilatation. There were 106 reversible defects on SL: 48% were present and reversible on LL, 26% were present but fixed on LL and 26% were new. The 28 fixed defects on LL that became reversible on SL were mostly of moderate intensity (71%), whereas the 79 defects which were fixed on both studies were mostly severe (66%; $p < 0.01$). Five perfusion patterns were observed: 1) normal or equivocal on both (4 pts); 2) mostly fixed defects on both (8 pts); 3 combined fixed and reversible defects on both with no interval change (9 pts); 4) combined fixed and reversible defects with less ischemia on SL (1 pt); and 5) combined fixed and reversible defects with more ischemia on SL (14 pts). Of those with pattern #5, 10 pts had 2 or more additional reversible segments on SL in the same coronary territory compared to LL; 4 other pts had at least two new reversible segments in a remote coronary territory, compared to LL. Thus 14/36 (39%) pts were identified with significantly more ischemia on SL than on LL. *Conclusion:* Late symptom-limited myocardial perfusion testing following low level pre-discharge testing was justified because it demonstrated new ischemia in remote coronary territories or territories initially showing predominantly fixed defects. These may indicate additional risk for future cardiac events.

747 Myocardial Ischemia: Can Gender Differences Be Identified?

Tuesday, March 18, 1997, 10:30 a.m.–Noon
Anaheim Convention Center, Room C2

10:30

747-1 Negative Survival Impact of Female Gender and Extensive Myocardial Hypoperfusion in Syndrome X: A Multicenter Study

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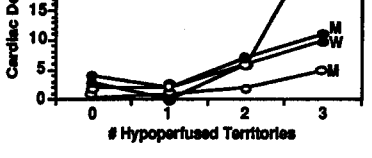
Chest pain with a normal angiogram (Syndrome X) is more common in women, and usually has an excellent prognosis (>92% 7-year survival in C.A.S.S.). To elucidate correlates of decreased survival in Syndrome X, we studied a multicenter registry of 2,613 stable chest pain pts (age 69 ± 11 yrs; 46% women, 3% diabetic, 2% hypertensive) referred for stress myocardial perfusion tomography (SPECT) and diagnostic coronary angiography. No coronary artery stenosis >50% occurred in 931 (66%) of men (M) and 998 (82%) of women (W). Overall, 3-year cardiac death rates were low (M = 2.7% vs. W 2.1%; p = NS). The figure illustrates cardiac death rates as a function of gender, the number of hypoperfused SPECT myocardial territories (0–3) and the presence (•) or absence (o) of coronary artery disease (CAD). Kaplan-Meier 3-year survival was 62% in the 33 women (3.3%) with no CAD plus 3 hypoperfused SPECT territories ($p < 0.001$ vs. men and women with CAD).



Conclusion: The subset of women with Syndrome X and extensive stress-induced hypoperfusion have significantly reduced survival, possibly due to the undertreatment of microvascular myocardial ischemia.

10:45

747-2 Echocardiographic Diastolic Function – A Sensitive Noninvasive Approach for the Detection of Coronary Artery Disease in Women

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Background: Ergometric testing for noninvasive evaluation in suspected coronary artery disease (CAD) is regarded to be less sensitive in women than in men. As this represents a serious drawback in management of women with suspected CAD new diagnostic strategies are warranted.

Methods: To assess the relevance of left ventricular (LV) diastolic function in this setting 45 (24 male, 21 female) consecutive patients (pts) with suspected CAD and normal LV systolic function were investigated electrocardiographically during bicycle ergometry and echocardiographically at rest on the day prior to cardiac catheterization. Exercise was to be regarded as predictive of CAD in case of angina pectoris and ST-segment depression of >0.2 mV. Doppler echocardiographic parameters included: peak early diastolic flow velocity (V_E; m/s), peak late diastolic flow velocity (V_A; m/s), early-to-late flow velocity (V_E/V_A), acceleration (AT; ms) and deceleration