the absence of obstruction. The peak velocity differences between the proximal and distal part to the stent significantly increased from 1.24 ± 0.86 m/s to 2.92 ± 0.44 m/s with the higher flow rates (p < 0.05), and mean velocity differences significantly increased from 0.34 ± 0.59 m/s to 0.63 ± 0.34 m/s (p < 0.05). The V1 corrected Bernoulli equation correlated well with the catheter-measured peak-to-peak pressure gradient (r = 0.80, SEE = 3.17); but it overestimated the mean pressure measurements by 38.01 ± 214.64. Conclusion: Flow acceleration occurs with a stent proximal arterial segment and a compliant distal segment with a long rigid stent interposed between them, and while small pressure gradients occur, they are not accurately estimated by the usual V1 corrected Bernoulli relationship.

POSTER SESSION

1070 Stress Echocardiography I
Sunday, March 17, 2002. 3:00 p.m.-5:00 p.m.
Georgie World Congress Center, Hall G
Presentation Hour: 4:00 p.m.-5:00 p.m.

1070-69 Outcome of Patients After Exercise Echocardiogram
Suggestive of Single Vessel Coronary Artery Disease

Background. Patients (pts) with exercise wall motion abnormalities (WMA) suggestive of single vessel coronary artery disease (SVD) are thought to have an intermediate risk for cardiac events. The predictors of outcome in these pts are not known.

Aims. To study the outcome of pts with WMA suggestive of SVD, and to identify the predictors of cardiac events in these pts.

Methods. Follow up was performed in 702 pts (age 64 ±10 years, 394 men) who had WMA suggestive of SVD during symptom-limited exercise echocardiography.

Results. Abnormalities were located in the territory of the left anterior descending coronary artery (LAD) in 355 pts and in the left circumflex (LCX) or the right coronary artery (RCA) distribution in 347 pts. There were 21 cardiac events (7 cardiac deaths and 14 nonfatal myocardial infarctions) during a median follow-up of 3 years. Event rates in pts with WMA in LAD versus other distributions were 1% vs 1.5% at 2 years, 3.2% vs 2.1% at 3 years and 10.8% vs 2.1% at 5 years (graph). P = 0.09. A history of myocardial infarction was the only clinical predictor of events. WMA in the distribution of LAD were incremental to clinical data and ejection fraction in the prediction of events (global ρ = 0.29, ρF = 0.38, P = 0.003).

Conclusion. Pts with single-vessel distribution of exercise WMAs have low event rate if the WMA were located in the RCA or the LCX distribution. Pts with WMAs in the LAD territory have a higher event rate during intermediate term follow up.

1070-60 Which is Accurate to Detect the Coronary Stenosis Using Adenosine Triphosphate Stress Test? Wall Motion Abnormality or Replenishment Curve Analysis of Real-Time Myocardial Contrast Echocardiography
Fumitaka Ishikura, Katsunori Onishi, Jyri Okazaki, Hideo Hirayama, Yasuki Hashiguchi, Sachiko Yagura, Tetsuro Takahashi, Atsuo Isawa, Hiroyuki Katsuyama, Tatsuya Akishita, Shinichro Beppu, Osaka University, Suita, Japan.

Background and Purpose: Analysis of replenishment curve after bubble destruction at stress test in real-time myocardial contrast echocardiography (MCE) is useful to detect coronary stenosis. Wall motion abnormality is also the marker of myocardial ischemia. Aim of this study is to examine the accuracy of each method for diagnosis of coronary stenosis by adenosine triphosphate (ATP) stress test.

Methods. Ten dogs were examined before and after having severe stenosis in the circumscribed coronary artery (LCX). Each flow volume of LCX and the left anterior descending coronary artery (LAD) was measured by an ultrasonic flowmeter, and coronary flow reserve (CFR) was calculated using ATP administration. Real-time MCE along the short axis was recorded by Sequoia 512 (Siemens) during infusion of 0.1 ml/min of Option®. The wall motion abnormalities were evaluated and the replenishment curve was analyzed by fitting to an exponential function of $r(t) = r_0 e^{-kt}$ (r(t) is the mid-epicardial (LAD) region and lateral wall (LCX region) before and after ATP infusion.

1070-71 Effective PredischARGE Triage at the Emergency Room With Dobutamine Stress Echocardiography and Cardiac Troponin T

Background: Risk stratification of patients with chest pain remains a challenge. We prospectively studied the prognostic value of cardiac troponin T (cTnT) and dobutamine stress echocardiography (DSE) in low to intermediate risk chest pain patients.

Methods: Patients presenting at the emergency room <6 hours of chest pain onset and a normal or non-diagnostic electrocardiogram were eligible. cTnT (measured on admission, cut-off point of 0.016ug/ml at 12 hours after symptom onset) and cTnT+ was considered abnormal. DSE was performed >24 hours after admission, after ruling out unstable coronary artery disease by standard protocol. DSE was positive if a new wall motion abnormality occurred (DSE+), DSE and cTnT results were blinded. All patients were followed up at 1 month. Cardiac events were cardiac death, acute myocardial infarction, unstable angina requiring hospital admission, and revascularization (14).

Results: In total, 408 patients were included. After 6 months, 31 patients had experienced a cardiac event: cardiac death (5), acute myocardial infarction (4), unstable angina (10), revascularization (14). Results are displayed in the table.

Conclusion: For triage at the emergency room, DSE has independent prognostic value in addition to serial cTnT in low to intermediate risk chest pain patients. Importantly, in patients with a normal troponin T, DSE was able to distinguish low risk patients from high risk patients.

1070-62 Does Real-Time Perfusion Have Any Incremental Value for the Sensitivity and Specificity of Dobutamine Stress Echocardiography?

Contrast administration during Dobutamine Stress Echo (DSE) in technically difficult studies leads to improved sensitivity and specificity as compared to patients with good quality images has already been shown. However, there is very limited data relative to simultaneous assessment of perfusion and wall motion in clinical setting. We therefore evaluated 101 patients who underwent DSE with myocardial perfusion during continuous infusion of Optison. All patients underwent coronary angiography. Quantitative perfusion analysis, regional wall thickening (WT) were performed. Overall characteristics of the study group: 42% of pts had a history of a previous coronary artery disease, and 44% had history of myocardial infarction. 50% of patients had 50% narrowing; 50% had more than 50% narrowing. Sensitivities and specificities were calculated for DSE and nuclear. Table shows overall sensitivity for DSE of detecting for coronary artery disease (50% or greater) was slightly higher compared with adiabatic perfusion and wall thickening analysis performed (71% vs 60%, p = 0.06) however still lower than sensitivities obtained with nuclear imaging (88% vs 86%, p = 0.06). On the other hand, specificity was decreased slightly with perfusion information (79% vs 74%, p = NS).

Conclusion: Contrast administration during Dobutamine Stress Echo combined with quantitative assessment of perfusion and wall motion in clinical setting. We therefore evaluated.