PCI group and 1,084 in the MED group. The trial lost very few patients to follow-up (0.7% in PCI and 1.1% in MED).

The trial results were somewhat unexpected. There was no difference between the two groups in death, reinfarction, or heart failure (hazard ratio (HR) 1.16 [95% CI, 0.92 – 1.45]; p=0.20). The rates of these primary events were 17.2% in the PCI group and 15.6% in the MED group. "The rate of severe heart failure was much lower than we projected", commented Dr. Hochman. In terms of nonfatal myocardial reinfarction, an increase in risk was seen in the PCI group (6.9%) versus the MED group (5.0%), with an HR of 1.44 ([95% CI, 0.96 – 2.26]; p=0.08). The investigators conducted additional subgroup analysis to determine if any other factors were related to the increase in risk. No significant differences were found when subgroups such as age, gender, race, ethnicity, ejection fraction, presence of diabetes, Killip class, the artery where the infarction occurred, or the time from MI to randomization were analyzed.

Four-year cumulative event rates in OAT

Outcome	PCI (%)	Medical (%)	HR	95% CI	p
Death, MI, HF	17.2	15.6	1.16	0.92-1.45	0.20
All MI	7.0	5.3	1.36	0.92-2.00	0.13
Nonfatal MI	6.9	5.0	1.44	0.96-2.16	0.08
NYHA Class 4 HF	4.4	4.5	0.98	0.64-1.49	0.92
Death	9.1	9.4	1.03	0.77-1.40	0.83

What does this mean for clinicians? Aggressive medical intervention without revascularization may be an appropriate approach for patients that have a profile similar to the OAT population. The results of the OAT trial were published online on November 13, 2006 in the *New England Journal of Medicine* (www.nejm.org; Hochman et al; DOI 10.1056/NEJMoa066139**).** Economic and quality of life trial results will be reported separately.

Effects of Carperitide and Nicorandil on Injury and Function in Patients with Acute MI: Results of the J-WIND Trial

Masafumi Kitakaze, MD, PhD, Department of Internal Medicine and Therapeutics, Osaka University Graduate School of Medicine, presented the results of the Japanese Working Groups of Acute Myocardial Infarction for the Reduction of Necrotic Damage by Atrial Natriuretic Peptide (ANP) or Nicorandil (J-WIND) trials conducted in Japan from 2001-2006. Carperitide, human recombinant ANP, is approved for the treatment of acute heart failure in Japan. Nicorandil, a nicotinamide nitrate that activates potassium channels in the heart, is used to treat chronic angina. These randomized, double-blind studies evaluated intervention with either carperitide or nicorandil on infarct size, left ventricular function, and associated outcomes.

The study population was patients experiencing their first heart attack. In one trial, patients were given either carperitide (0.025 mcg/kg/min for 3 days) or a 5% glucose solution as a placebo. In the second trial, patients were administered nicorandil (0.067 mg/kg bolus plus 1.67 mcg/kg/min for 24 hours) or a placebo saline infusion. The size of the infarct was determined by measuring the area under the curve (AUC) of creatinine kinase (CK). Chronic left ventricular function (LVEF) was evaluated via ventriculography.

There were no significant differences in demographics of the groups of patients in either trial. The carperitide trial randomized 569 patients, 277 to active treatment and 292 to placebo. Patients were followed for an average of 2.7 years. The CK AUC was 14.7% lower in patients treated with carperitide (p=0.016), and chronic LVEF was 5.1% higher than the control group (p=0.024). The

incidence of a reperfusion injury was markedly reduced in the carperitide group (25.9% reduction; p=0.019). In terms of outcomes, carpertide-treated patients had a 73.3% reduction in risk of cardiac death or re-hospitalization for heart failure (HR=0.267; 95% CI [0.089-0.800]; p=0.011).

The nicorandil study randomized 545 patients, 276 to nicorandil and 269 to placebo. Patients were followed for an average of 2.5 years. Nicorandil did not demonstrate an effect on CK AUC, LVEF, or reperfusion injury, although it had a modest decrease in cardiac death and heart failure outcomes (HR=0.779; 95% CI [0.307-1.973]; p=0.597). Nicorandil oral therapy fared better. A subsequent analysis of nicorandil oral administration the chronic phase had positive effects on LVEF (p=0.034) and inhibited new lesions in non-culprit coronary arteries (p=0.010).

"These results will change the strategy of the acute phase treatment of heart attack", predicted Dr. Kitakaze. Larger prospective randomized trials are needed to confirm these promising results.

The Alternans Before Cardioverter Defibrillator (ABCD) Trial

The Alternans Before Cardioverter Defibrillator (ABCD) Trial sought to determine if this non-invasive test could help predict the risk of sudden cardiac death (SCD) and thereby direct the therapy of implanted cardiac defibrillators (ICD) as good as, or better than current methods. Electrophysiology study (EP) is the prevailing method and involves threading a catheter through a patient's veins into the heart to induce an arrhythmia with an electric shock. This invasive technique requires a high degree of skill, which limits its availability, and exposes the patient to a certain degree of procedural risk. The Microvolt T-Wave Alternans (MTWA) Test™, however, involves only the topical placement of electrocardiogram sensors on the chest.

"The ABCD trial is the first to use MTWA to guide implantation of defibrillators," said David Rosenbaum, MD, Professor of Medicine at Case Western Reserve University in Cleveland and lead author on the study.

The trial was initiated in May 2001 and enrolled 566 patients with ischemic cardiomyopathy from 43 centers in the United States, Germany and Israel. Participants were 18 years of age and older, had no prior arrhythmias and left ventricle injection fractions (LVEF) ≤40. Patients were placed into one of two groups according to initial test results. If either the EPS or MTWA test was positive, patients received an ICD; if both tests were negative, an ICD was optional but encouraged. Seventy percent of this later group chose to receive the defibrillator; 88% of the total population therefore received ICDs. The median follow-up time was 1.9 years with events adjudicated by an independent committee who were blinded to the screening methodology.

At one year, both EPS and MTWA strategies had similar positive and negative predictive values. The event rates for patients that had an indication for an ICD according to both tests were higher (12.6%) than those with negative predictor values (2.3%; p=0.017). Negative predictive values of both methods combined was better than that of either method alone.

"Another finding of the ABCD trial…is that risk stratification can improve the therapeutic efficacy of ICD implantation to a far greater extent than increases in risk. And, of course the appropriate level of acceptable risk must be individualized to specific patients," said Dr. Rosenbaum. For example, 95% of patients who have an indication for ICD implantation by LVEF alone do not experience an event (representing therapeutic