(Table 1). The use of these stents might reduce the duration of dual platelet therapy.

Table 1. Clinical Events in Patients with 12-Month Follow-Up. Interim results as of Feb. 21, 2008, n=1640.

	30 days	6 months	12 months	
Cardiac Death	0.6%	1.5%	2.1%	
MI	1.2%	1.6%	1.8%	
Q-wave	0.1%	0.2%	0.2%	
Non Q-wave	1.0%	1.4%	1.5%	
TLR (Clinically Driven)	0%	2.8%	5.4%	
PCI	0.1%	2.6%	5.1%	
CABG	0.0%	0.2%	0.4%	
MACE	1.9%	5.9%	9.3%	
Acute stent thrombosis				0.0%
Sub-acute stent thrombosis				0.5%
Late stent thrombosis				0.5%

Patients treated before Aug 14, 2006. All events reported before Jan 15, 2008; all events adjudicated by CECWorst MACE per patient = cardiac death, MI, CABG, and clinically driven TLR.

Bioabsorbable Stents

Bioabsorbable stents, called "The Holy Grail" by some, have several theoretical advantages over permanent stents, including no chronic inflammation, short duration of platelet therapy after stenting, and avoidance of late thrombosis. Although the initial experience is promising [Erbel R et al. *Lancet* 2007; Ormiston JA et al. *Lancet* 2008], according to Ron Waksman, MD, Georgetown University, Washington, DC, bioabsorbable stents are not ready for mainstream use. He sees the remaining challenges as restenosis, radial strength, biocompatibility, radioopacity, and ability to combine the kinetics of stent degradation with the kinetics of drug elution.

Paclitaxel-Coated Balloon

Bruno Scheller, MD, Universität des Saarlandes, Homburg/Saar, Germany, presented results from several studies that evaluated the drug-eluting balloon (DEB), a new approach that is based on immediate, short-lasting drug release and homogeneous drug distribution along the vessel wall that can be used alone or in combination with a BMS. The DEB has been tested in patients with coronary in-stent restenosis and has shown positive results in terms of late lumen loss and event-free survival.

Many challenges remain in the development of new stent systems. It was clear, however, from the information presented at this session that researchers are well on their way to finding new and innovative solutions to some of the problems that are seen with the current generation of stents.

Implications of COURAGE Data Discussed

A year after their initial presentation, the findings of the Clinical Outcomes Utilizing Revascularization and Aggressive Drug Evaluation (COURAGE) trial continue to generate debate and uncertainty. The session, "COURAGE in Perspective," was designed to help provide clarity about the trial results and their implications for specific subgroups of patients.

In brief, the findings of the COURAGE study demonstrated that routine percutaneous coronary intervention (PCI) in patients receiving optimal medical therapy (OMT) did not provide additional benefit compared with OMT alone in patients with chronic angina and stable coronary artery disease. There were no differences between the 2 treatment strategies in terms of overall mortality, hospitalization for acute coronary syndrome, or myocardial infarction (MI), although anginal symptoms were reduced for the first 3 years in the PCI group.

Questions have surrounded the implications of the COURAGE findings in terms of the age and gender of patients. William E. Boden, MD, State University of New York, Buffalo, NY, lead investigator of the COURAGE trial, said that although there were numerically higher death and death/MI rates in older patients (≥65 years) in the trial, there was no evidence that an initial strategy of PCI plus OMT was better than OMT alone in mitigating clinical events in this population. "These data support adherence to published American College of Cardiology/American Heart Association (ACC/AHA) treatment guidelines that recommend OMT as the preferred initial management strategy, regardless of age," he said. He added that PCI appeared to be of benefit for women in the overall trial, but a gender subset analysis indicated no significant differences between PCI plus OMT and OMT alone for major prespecified cardiovascular events in women. He explained that the subset analysis involved adjustments to account for differences in baseline clinical characteristics between the men and women in the study, which eliminated differences in outcomes between the genders.

Data from the nuclear substudy of COURAGE have begun to answer other questions about how the trial findings apply to varying degrees of ischemia [Shaw et al. *Circulation* 2008]. The results of this subanalysis indicated that PCI plus OMT was associated with a higher rate of ≥5% reduction in ischemic myocardium (33% vs 19%; p=0.0004), especially among patients who had moderate to severe ischemia

before treatment (78% vs 52%; p=0.007). Carl Tomasso, MD, Evanstown Northwestern Healthcare, Skokie, IL, suggested that PCI is indicated for patients who have a large amount of jeopardized myocardium or if OMT alone does not provide adequate relief of angina or the desired level of physical activity. He also emphasized that COURAGE did show several benefits of PCI: it led to a lower rate of subsequent revascularization, to better relief of angina over 1-3 years, and to better quality of life over 1-2 years.

Bernard J. Gersh, Mayo Clinic, Rochester, MN, commented that the COURAGE substudy results also suggest that the ACC/AHA guidelines for chronic stable angina are applicable to patients with silent ischemia. For patients with silent ischemia without overt angina or anginal equivalents, high-risk features on stress testing should be used as indications for angiography, said Dr. Gersh, and revascularization should be performed if "compelling" anatomy is identified.

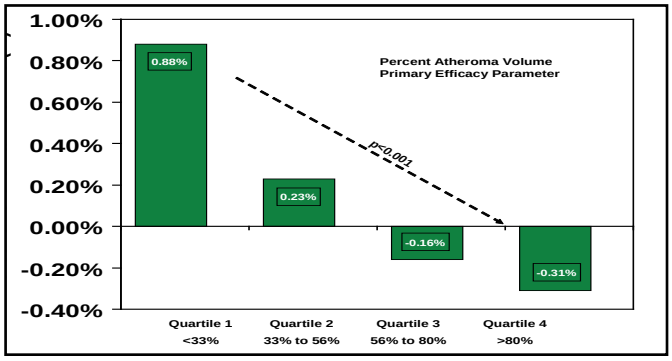
American College of Cardiology/ European Society of Cardiology Joint Symposium on Lipids

When the results of the ILLUSTRATE (Investigation of Lipid Level Management Using Coronary Ultrasound to Assess Reduction of Atherosclerosis by CETP Inhibition and HDL Elevation) trial [Nissen SJ et al. *N Engl J Med* 2007] called into question the efficacy of the cholesteryl ester transfer protein (CETP) inhibitor torcetrapib, many thought it signaled the end of the pursuit of these compounds for the treatment of dyslipidemia. Steven E. Nissen, MD, Cleveland Clinic, OH, discussed new data from ILLUSTRATE, which provide hope for the future of CETP inhibitors.

Although ILLUSTRATE showed that the CETP inhibitor torcetrapib increased HDL-C levels, the primary analysis did not show an effect on atherosclerotic progression. A new secondary analysis of the ILLUSTRATE data has shown that when percentages of HDL-C elevation are viewed as incremental quartiles, there is a progressive decrease in rate of progression of coronary atherosclerosis relative to the extent of HDL-C elevation. Patients who reached the highest HDL-C level (>86 mg/dL) actually achieved atherosclerosis regression (Figure 1).

Several new CETP inhibitors are entering clinical trials, and Dr. Nissen expressed hope that the newer drugs might prove to be clinically useful, because they do not appear to cause an increase in blood pressure, as was shown with torcetrapib.

Figure 1. Torcetrapib Results: Quartiles of HDL-C Elevation.



Johan W. Jukema, MD, Leiden University Medical Center, Amsterdam, The Netherlands, spoke about statin therapy in three subgroups of patients who are known to be at risk for cardiovascular (CV) events: patients with chronic kidney disease, older patients with moderate to severe ischemic systolic heart failure, and the at-risk elderly.

According to Prof. Jukema, study results are mixed for the first two groups. For patients with chronic kidney disease, he cited results from a meta-analysis that showed that the use of statins can significantly reduce lipid concentrations (total cholesterol -42.28 [95% CI, -47.25 to -37.32]; LDL-C -43.12 [95% CI, -47.85 to -38.40]; HDL-C +0.41 [95% CI, -0.78 to 1.60]; and triglycerides -23.71 [95% CI, -33.52 to -13.90]), as well as mortality (RR 0.81; 95% CI, 0.73 to 0.90), but that they provide no benefit for all-cause mortality (RR 0.92, 95% CI, 0.82 to 1.03) [Strippoli GFM et al. *Br Med J* 2008].

For older patients with ischemic systolic heart failure, Prof. Jukema cited new data from CORONA (Controlled Rosuvastatin Multinational Trial in Heart Failure), which showed that although the use of rosuvastatin 10 mg daily significantly decreased the number of related hospitalizations (2564 vs 2193, placebo vs rosuvastatin, respectively; p<0.001), there was no effect on the primary composite endpoint of death, non-fatal MI, or non-fatal stroke (HR 0.92; 95% CI, 0.83 to 1.02; p=0.12) [Kjekshus J et al. *N Engl J Med* 2007]. These findings were surprising because prior retrospective analyses with atorvastatin 80 mg [Scirica BM et al. *J Am Col Cardiol* 2006; Khush KK et al. *Circulation* 2007] had suggested that such patients might benefit from high-dose statin therapy.

Prof. Jukema also discussed the results of a meta-analysis that examined the effect of statin therapy for secondary prevention in elderly patients with coronary heart disease, which showed that not only do statins reduce all-cause mortality in these patients (15.6% with statins vs 18.7% with placebo, RR reduction 22% over 5 years; 95% CI, 0.65 to 0.89),