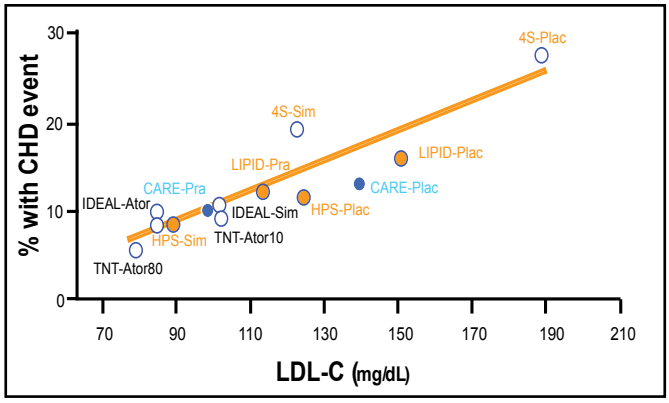
Figure 1. Statin Trials: LDL-C Levels vs Events.



Deedwania and colleagues have shown, however, that intensive lowering of LDL-C produced even greater benefit in patients with both coronary heart disease and the metabolic syndrome. Their analysis comprised data from 5,584 patients randomly assigned to receive either atorvastatin 10 mg (n=2,820) or 80 mg per day (n=2,764). Although at a median follow-up of 4.9 years, irrespective of treatment assignment, significantly more patients with metabolic syndrome (11.3%) had a major cardiovascular event than those without metabolic syndrome (8.0%; p<0·0001); the increased risk was significantly reduced by intensive therapy, as shown by significantly fewer events in patients receiving atorvastatin 80 mg (262, 9.5%) vs those receiving the lower dose (367, 13%) (HR 0·71; 95% CI 0·61, 0·84; p<0·0001) [Deedwania P et al. *Lancet* 2006].

Several studies that assessed the efficacy of fibrates in the treatment of patients with the metabolic syndrome such as the Helsinki Heart Study [Tenkanen L et al. *Circulation* 1995; Manninen V et al. *Circulation* 1992], the VA-HIT Study [Rubins HB et al. *Arch Int Med* 2002], and the BIP study [BIP Study Group. *Circulation* 2000], have shown that the benefits of fibrates were greatest in people with risk factors for the metabolic syndrome such as increased body weight, particularly if associated with low LDL-C, elevated plasma triglycerides, and elevated fasting plasma insulin levels.

According to Dr. Barter, although, theoretically there may be advantages to using statins and fibrates in combination, and studies are underway, this has not been proven. Furthermore, combination of high-dose statins and fibrate (in particular gemfibrozil) has been shown to increase the risk of rhabdomyolysis. Other pharmacologic approaches such as the cannabinoid-1 receptor blockers (rimonabant) are also being investigated but their efficacy in reducing cardiovascular events has not yet been demonstrated.

STEMI: From Trials to Clinical Practice

Alexandros Skarlos, MD, Klinikum Ludwigshafen, Germany, presented a registry analysis demonstrating that STEMI patients admitted to hospitals with a cath lab are treated with significantly higher rates of reperfusion and guideline-recommended adjunctive therapies and that this treatment is associated with a lower 1-year mortality.

The results are based on an analysis of data from the ACOS registry for 8,303 STEMI patients of whom 6,351 (76.5%) were initially admitted to a hospital with a cath lab and 1,952 (23.5%) to a hospital without such a facility.

During the first 24 hours, reperfusion therapy was significantly more common in hospitals equipped with a cath lab (75.6%) vs those without (54%; p<0.0001). A comparison of other treatments and in-hospital and 1-year mortality rates are shown in Table 1.

Table 1. Treatment and Mortality Differences.

	Hospitals with cath lab	Hospitals without cath lab	p-value
Reperfusion Procedures <24h			
Primary PCI	51.8%	9.2%	<0.001
Lysis	23.8%	44.7%	<0.001
Door-to-balloon time	75 min	148 min	<0.0001
Adjunctive therapy <48h			
Aspirin	91.5%	89.7%	<0.05
Clopidogrel	60.2%	18.9%	<0.0001
GP IIb/IIIa	46.7%	8.9%	<0.0001
β-Blockers	80.0%	75.8%	<0.0001
ACE-inhibitors	65.6%	57.1%	<0.0001
Mortality			
In-hospital	8.8%	11.5%	<0.001
1-year	13.7%	19.9%	<0.0001

Most therapy guidelines are based on clinical trial results. However, many patients seen in clinical practice are not represented in clinical trials. Oliver Koeth, MD, Klinikum Ludwigshafen, Germany, presented results of a registry designed to assess whether the patients typically excluded from clinical trials would benefit from guideline adherence.

Data for 36,247 STEMI patients from the MITRA (Maximal Individual Therapy of Acute Myocardial Infarction) PLUS registry were analyzed. Patients were assigned to two groups: those who failed to meet the typical inclusion criteria for most clinical trials (n=16,621) and those who met the criteria (n=19,626). Excluded patients were further assigned to subgroups based on common clinical trial exclusion criteria: age ≥75 years (n=9,360), pre-

hospital delay >12 hours (n=5,427), pre-hospital CPR (n=1,719), cardiogenic shock (n=1,192), creatinine >2 mg/dL; (n=1,149), previous stroke/TIA (n=893), and oral anticoagulation with INR >2 (n=198).

Patients often excluded from clinical trials tended to be older, were more likely to be women, and more frequently had existing comorbidities (eg, hypertension, diabetes). These patients received significantly less adjunctive therapy (eg, aspirin, clopidogrel, beta-blockers, ACE-inhibitors, and statins) within 48 hours (each p<0.0001) compared to patients who satisfied typical trial criteria. The rate of reperfusion for excluded patients (42%) was also significantly lower than for included patients (73%; p<0.0001), and was particularly low among patients with a pre-hospital delay >12 hours (30%), those with renal failure (34%) and those aged >75 years or with prior stroke (both 38%).

Overall, hospital mortality was significantly higher in excluded (22%) vs included patients (6%; p<0.0001). However, when data were analyzed based on whether patients had received reperfusion therapy, hospital mortality for patients who received reperfusion therapy was significantly improved in all groups, except those with renal insufficiency (Table 2).

Table 2. Hospital Mortality Within Subgroup.

Group/Subgroup	No. Patients	Reperfusion <48 hours	No Reperfusion <48 hours	p value*
Age ≥75 Years	9213	21.1% (736/3486)	28.3% (1620/5727)	<0.0001
Pre-hospital delay >12 hrs	5288	8.7% (141/1612)	12.3% (452/3676)	<0.001
Cardiogenic shock	2187	42.7% (551/1291)	67.1% (601/896)	<0.0001
Pre-hospital CPR	1756	33.6% (364/1083)	58.5% (394/673)	<0.0001
Creatinine >2mg/dl	1130	33.8% (128/379)	38.6% (290/751)	0.11
Previous stroke/TIA	894	15.0% (51/339)	32.8% (182/555)	<0.0001
Oral anticoagulants (INR >2)	198	6.8% (7/103)	26.3% (25/95)	<0.001

*univariate

These results suggest that adherence to guideline therapy, particularly, early reperfusion therapy, may significantly reduce hospital mortality in STEMI patients with characteristics that would usually exclude them from randomized clinical trials.

In clinical practice adherence to guideline-recommended therapies results in improved outcome in STEMI patients, even in those who are not representative of patients enrolled in the randomized clinical trials from which those guidelines are derived.

Important limitations of these registry analyses include the lack of randomization and the difficulty in fully adjusting for differences in patient characteristics and other clinical issues (eg, patient preference) that may have impacted on the care delivered and clinical outcomes.

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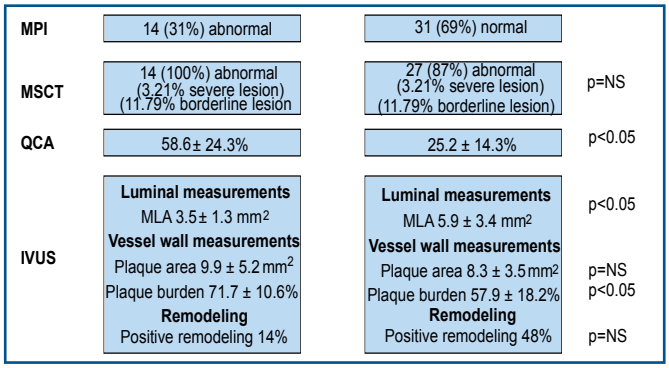
Figure 1. MPI vs MSCT vs QCA vs IVUS.



For example, some patients had no ischemia according to MPI and no significant stenosis on QCA but had evidence of atherosclerosis on MSCT and intravascular ultrasound. Prof. Schuijf concluded that the complementary nature of MPI and MSCT may allow for improved characterization of CAD. She added that more evidence is needed before it can be determined whether the combined use of the two modalities will result in improved management and outcome.

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reduction in stent area suggesting late stent recoil. Overall the in-stent volume obstruction was 5.5±8.5%. In 11 patients there was no detectable neointimal hyperplasia; some degree of neointimal hyperplasia was detected in 13 patients. In 13 patients with both late recoil and neointimal hyperplasia, the in-stent volume obstruction was 10.2±9.2%. The rate of major adverse cardiac events was low (3.3%).

Table 1. IVUS Results (24 Patients).

	Post-PCI	Follow-Up	% Difference	p-value
Vessel area (mm^2)	13.55	13.49	-0.4	NS
EEM-Stent area (mm^2)	7.47	8.08	+8.2	0.003
Stent area (mm^2)	6.08	5.37	-11.7	<0.001
Neointimal hyperplasia area (mm^2)	0	0.30	NA	NA
Lumen area (mm^2)	6.08	5.07	-16.6	<0.001
Stent area obstruction (%)	0	5.54	NA	NA

"The encouraging results from the first 30 patients of ABSORB suggest that drug-eluting bioabsorbable stent technologies may be a promising future therapy option for physicians treating patients with heart disease," said Prof. Serruys, co-principal investigator of the study. "A drug-eluting stent that would eventually disappear after restoring blood flow is an exciting concept that we look forward to further exploring."