

## Coronary Intervention: Complex Lesions and Patient Subsets

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## TCT-65

### Clinical impact of IVUS-guided left main PCI: insights from the multicenter study ESTROFA-LM.

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**Background:** Percutaneous revascularization of left main lesions with drug eluting stent (DES) is an alternative to surgery in high risk patients and in those cases with no high Syntax scores. Whether the use of IVUS during the procedure adds a clinical benefit remains unclear. There is only one single study with some limitations that supports this statement. Therefore we sought to investigate the clinical impact of the use of IVUS in this setting.

**Methods:** From a retrospective multicenter study that compared different drug-eluting stents in the setting of left main disease we have analyzed the clinical impact of the use of IVUS. Consecutive patients from 21 different hospitals with left main lesions treated with DES were included. A systematic follow up was performed. The clinical outcomes were analyzed depending on the use of IVUS during the procedure.

**Results:** A total of 770 patients were included. IVUS was used in 233 cases (30.2%). After a three years follow up period the use of two stents, age, diabetes and acute coronary syndrome were found independent predictors of events in the global group after a Cox analysis. In the subgroup of 409 (53.1%) patients with distal left main lesion the independent predictors were the use of two stents, age, diabetes and the use of IVUS, being the latter a protective predictor (HR 0.5, IC 95% 0.23-0.99; p=0.04). In this distal lesion subgroup the survival free from death, myocardial infarction and revascularization after three years was 95% in the 102 patients with IVUS guiding and 77.5% in the 307 patients without IVUS (p=0.001). The analysis of the 108 patients with two stents implanted in distal left main shows a survival free from events of 86.7% in the IVUS guided group (27 patients) and 67.3% in the non-IVUS guided group (81 patients), (p=0.06).

**Conclusions:** The results of this multicenter registry suggest a clinical benefit derived from IVUS-guided PCI in distal left main lesions.

## TCT-66

### Impact of Residual Chronic Total Occlusion of Right Coronary Artery on the Long Term Outcome in Patients treated for Unprotected Left Main Disease: The Milan and New-Tokyo (MITO) Registry

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**Background:** The presence of right coronary artery occlusion (CTO-RCA) in patients undergoing percutaneous interventions (PCI) for unprotected left main disease (ULM)

may affect the prognosis. In this study we evaluated the immediate results and follow-up of patients with ULM-PCI and with or without associated CTO-RCA.

**Methods:** Between March 2002 and December 2008, 568 consecutive patients with ULM stenosis treated with drug-eluting stent were included in this analysis.

**Results:** The mean EuroScore and SYNTAX scores were 4.05±2.62 and 28.12±10.82 respectively. Of these, 522 had ULM lesions without residual CTO-RCA (493 ULM without CTO-RCA + 29 ULM with treated CTO-RCA) and 46 patients had residual CTO-RCA. At 1466 days (IQR: 1150-1917) follow-up, the cardiac-death occurred in 41 (7.2%) patients. Cardiac-death was more frequently observed in patients with ULM and residual CTO-RCA as compared to those without residual CTO-RCA (adjusted HR 2.277 [CI 1.190-4.355], p=0.031). However, TLR occurred less frequently in patients with residual CTO-RCA (unadjusted HR 0.424 [CI 0.173-1.040], p=0.061), resulting in the similar MACE rates between the 2 groups. When we analyzed patients with concomitant ULM and CTO-RCA, cardiac-death was significantly higher in patients with residual as compared to treated CTO-RCA (log-rank p= 0.01) despite no difference in baseline characteristics.

**Conclusions:** Cardiac-death occurred more frequently in patients with residual CTO-RCA as compared to those without residual CTO-RCA. These findings suggest that recanalization of CTO-RCA has significant impact on the long-term cardiac-mortality in patients undergoing ULM-PCI probably by offering reserve coronary circulation, if ISR were to occur in the treated LM.

## TCT-67

### Impact of Hemodynamic Support With Impella vs Intraaortic Balloon Counterpulsation on Prognostically Important Ischemic Endpoints: Results from the PROTECT-II Trial

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**Background:** Improved hemodynamic support may facilitate high risk PCI. The appropriate definition of peri-procedural cardiac enzyme elevation to define a clinically relevant myocardial infarction (MI) is controversial, although the advent of new Q-waves or a CK-MB elevation >8x normal have been previously validated as predictive of subsequent mortality.

**Methods:** In the PROTECT-II trial, patients undergoing high-risk PCI were randomized to hemodynamic support with a percutaneous Impella LV assist device vs. intraaortic balloon pump (IABP). We analyzed the outcomes of patients receiving the randomly assigned treatment (n=427), defining large MI as new Q-waves or CK-MB >8x normal.

**Results:** The overall population characteristics included 87% heart failure (57% with NYHA class III/IV, and 33% with previous pacemaker/AICD), previous PCI 40%, previous CABG 34%, diabetes 51% (of which 50% treated with insulin), previous stroke 15%, and peripheral arterial disease 15%. The 2 groups were well-matched according to baseline variables. Procedure characteristics included average 3 lesions treated and 3 stents used, 12% rotablator (all similar between the 2 groups), with more rotablator passes with Impella (6.3±3 vs 3.8±3, p=0.01). Clinical outcomes at 30 and 90 days are shown in the Table.

**Conclusions:** In a treatment received analysis from the PROTECT-II trial, use of Impella was associated with non-significantly different rates of death and large MI, but with lower rates of MAE and MACCE during follow-up through 3 months compared to IABP.

MAE (to 30 Days)	IMPELLA (n=216)	IABP (n=211)	p-value
Composite MAE	30.1%	39.8%	0.04
Composite MACCE	13.9%	19.9%	0.10
Large Myocardial Infarction	9.3%	8.5%	0.79
Death	6.9%	6.2%	0.744
Death, Stroke or Large Myocardial Infarction	12.5%	15.2%	0.425
MAE (to 90 Days)	IMPELLA (n=216)	IABP (n=211)	p-value
Composite MAE	36.7%	48.6%	0.01
Composite MACCE	21.9%	31.0%	0.03
Large myocardial Infarction	10.2%	12.4%	0.48
Death	11.6%	9.0%	0.383
Death, stroke or Large Myocardial Infarction	18.1%	22.4%	0.277
MACCE=death, large myocardial infarction, stroke, any repeat revascularization MAE= MACCE or any need for cardiac or vascular operation, acute renal dysfunction, increase in aortic insufficiency, severe hypotension, CPR or ventricular arrhythmia requiring cardioversion, and angiographic failure.			