Background: Very late stent thrombosis (VLST) after bare-metal stent (BMS) implantation is a rare complication. There is emerging evidence suggesting that in-stent neoatherosclerosis may play a role, but data on clinical characteristics and prognosis of patients (p) are limited. The aim of this study was to evaluate the profile and outcome of VLST after BMS implantation treated with percutaneous coronary intervention (PCI).

Methods: From January 2006 to May 2012 a total of 9,582 PCI were performed at our center. During this period we identified and retrospectively analyzed 30 consecutive p with angiographically confirmed VLST related to BMS. Minimum follow-up period of 1 year and 2 years was available in 25/30 and 23/30 p, respectively.

Results: Mean age of p was 60±13 years, 93% were male, 53% active smokers, 20% diabetics, 77% had hypertension and 67% hypertension. Clinical presentation of VLST after BMS was ST-segment elevation myocardial infarction (STEMI) in 27 cases, and 3 p (10%) had non-STEMI. Right coronary artery was the most common location of VLST (57%). Median period from BMS implantation to VLST was 7.9 years (interquartile range, 6.0-9.5 years) and most of the p (70%) were receiving oral antiplatelet therapy at the time of VLST (67% aspirin alone, 3% dual antiplatelet). All p with VLST after BMS underwent successful PCI. Effective thrombus aspiration was achieved in 67% of p and a new stent was deployed in 83% of p (14 DES, 11 BMS). A significant deterioration of LVEF occurred in p with VLST related to BMS (64±6% to 50±9%; p<0.001). Major adverse cardiac events (cardiovascular death or myocardial infarction) rates were 7%, 20%, and 39% at 30 days, 1-year and 2-year follow-up, respectively. During the 2-year follow-up period 3 p died and 6 p had a non-fatal myocardial infarction (recurrent stent thrombosis in 3 p and myocardial infarction not related to prior VLST in 3 p).

Conclusions: VLST after BMS implantation is an uncommon phenomenon, mainly presented as STEMI, and its treatment with a new PCI is feasible and effective. Nevertheless new major adverse cardiac events may occur in this group of p at short- and mid-term follow-up, related to both prior VLST and coronary disease progression.

TCT-666
Long Term Prognosis of In-Stent Restenosis after Drug-Eluting Stent Implantation and Predictors of Recurrent Restenosis: Data from the ASAN DES-ISR Registry
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Background: The optimal treatment of in-stent restenosis (ISR) after percutaneous coronary intervention (PCI) with drug-eluting stents (DES) remains an important clinical challenge to routine PCI practice. We evaluated the long-term outcomes of DES-ISR according to treatment modality and determined the predictors of recurrent DES-ISR.

Methods: We assessed outcomes in 488 patients with DES-ISR who underwent repeated revascularization (339 patients; 302 repeated PCI, 37 coronary artery bypass grafting) or medical treatment (149 patients) between February 2003 and December 2007. Their clinical presentation was STEMI (19.2%), non-STEMI (15.5%), and non-ST segment elevation myocardial infarction (12%); 57% were male, 59% active smokers, 20% diabetics, 77% had hyperlipidemia and 67% hypertension. Clinical results of revascularization were successful in 97% of DES ISR patients. A significant deterioration of LVEF occurred in p with DES ISR related to BMS (65±7% to 53±10%; p<0.001). Major adverse cardiac events (cardiovascular death or myocardial infarction) rates were 7%, 20%, and 39% at 30 days, 1-year and 2-year follow-up, respectively. During the 2-year follow-up period 3 p died and 6 p had a non-fatal myocardial infarction (recurrent stent thrombosis in 3 p and myocardial infarction not related to prior VLST in 3 p).

Conclusions: VLST after BMS implantation is an uncommon phenomenon, mainly presented as STEMI, and its treatment with a new PCI is feasible and effective. Nevertheless new major adverse cardiac events may occur in this group of p at short- and mid-term follow-up, related to both prior VLST and coronary disease progression.

TCT-667
Restenosis after coronary stenting in 10,004 patients with follow-up angiography
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Background: To date, studies of restenosis after percutaneous coronary interventions (PCI) with bare-metal-stents (BMS) or drug-eluting stents (DES) have not been performed in a very large population undergoing follow-up angiography.

Methods: All patients undergoing successful implantation of coronary stents for de novo lesions from 1998 to 2009 and control angiography at 6 out to 8 month-follow-up were included. Restenotic lesions, cardiogenic shock, dialysis or previous cardiac transplantation represented exclusion criteria. Data were prospectively collected. Restenosis was defined as diameter stenosis ≥50% in the in-segment area at follow-up angiography.

Results: We included 10,004 patients with 15,004 target lesions. At multivariate analysis PCI with DES was the strongest predictor of restenosis (odds ratio - OR 0.28 [95% Confidence intervals, 0.25-0.31]). Other correlates were vessel size (1.59 [1.51-1.68] for each 0.5 mm decrease), stenosis severity (1.03 [1.02-1.05] for each 5% increase), history of by-pass surgery (1.38 [1.20-1.58]), diabetes mellitus (1.32 [1.19-1.46]), left-main (1.35 [1.02-1.81]), B2/C lesions (1.35 [1.20-1.51]) and long-segment stenting (1.27 [1.21-1.33]). First-generation DES was less prone to restenosis as compared to BMS. Second-generation versus first-generation DES further reduced restenosis.

Conclusions: Drug-eluting stents and small vessel size represent the strongest predictors of restenosis. Second-generation DES has superior anti-restenotic efficacy as compared with first-generation DES.