Predictors of Reinfarction After ST Elevation Myocardial Infarction and Glycoprotein Receptor Blockade: Analysis From the CADILLAC Trial


Background: Risk factors for reinfarction after primary PCI utilizing contemporary techniques, including stents and glycoprotein IIb/IIIa inhibitors, have not been described.

Methods: The clinical and angiographic correlates of reinfarction after primary PCI were examined from the prospective, multicenter CADILLAC trial, in which 2,082 non shock patients presenting with AMI within 12 hours of symptom onset were randomized to PTCA vs. stenting, each with abciximab.

Results: Reinfarction occurred in 17 pts (0.8%) within 30 days, and in 48 pts (2.3%) within 1 year after PCI. Reinfarction by 1 year occurred in 2.2% of pts after PTCA only, 2.9% after PTCA + abciximab, 2.2% after stenting alone, and 2.2% after stenting + abciximab (P=0.85). Compared to pts without reinfarction, those with reinfarction more often had hypertension (63% vs. 48%, P=0.06), insulin requiring diabetes (10% vs. 3.6%, P=0.002), and LAD infarction (54% vs. 36%, P=0.01), but were less likely to be current smokers (25% vs. 43%, P=0.01). The incidence of multivessel disease was similar in pts with and without reinfarction. Procedural success (79% vs. 92%, P=0.007) and post-procedure minimal luminal diameter (2.26mm vs. 2.47mm, P=0.009) were lower in reinfarction pts, though final TIMI-3 flow rates were similar. By multivariate analysis, insulin requiring diabetes (HR =7.25, 95 CI [2.5, 21.2], p=0.0003), LAD infarct vessel (HR = 2.7 [1.2, 6.6], p=0.02), and current smoking at baseline (HR = 0.45 [0.19, 1.08], P=0.07) were independent predictors of reinfarction within 1 year. Specifically, reinfarction at 1-year occurred in 8.8% of pts with insulin requiring diabetes vs 2.0% without this condition (P=0.002), and in 3.4% of pts with LAD infarction vs 1.7% with non-LAD infarcts (P=0.01).

Conclusion: Reinfarction rates after primary PCI of AMI are strikingly increased in patients with insulin requiring diabetes, and are also greater in patients with anterior infarction. Neither stents nor glycoprotein IIb/IIIa inhibitors reduce the rate of reinfarction compared to balloon angioplasty. Close surveillance is warranted, and new strategies deserve study to determine if the rate of reinfarction in these high risk subgroups can be reduced.