Platelet response to clopidogrel and restenosis in patients treated predominantly with drug-eluting stents.

Abstract:
Preclinical studies suggest a relationship between early thrombotic response after vascular injury and later development of restenosis. The aim of this study was to assess the impact of platelet response to clopidogrel on the risk of restenosis after drug-eluting stenting (DES). A total of 1,608 consecutive patients were previously enrolled in a study on the relation between platelet reactivity and outcomes after DES. All patients received a loading dose of 600 mg clopidogrel. Blood samples for the assessment of adenosine diphosphate-induced platelet aggregation with multiple electrode platelet aggregometry were drawn directly before percutaneous coronary intervention. Clopidogrel low response was defined as upper quintile of multiple electrode platelet aggregometry measurements. Accordingly, 323 patients (20%) were considered as low and 1,285 (80%) as normal responders. Primary end point of the present study was target lesion revascularization at 1 year. Secondary end points included binary angiographic restenosis and late lumen loss at 6- to 8-month angiography. Target lesion revascularization rates were comparable in both groups (10.9% vs 9.5%, hazard rate [HR] 1.2, 95% CI 0.8-1.7, P = .441). Follow-up angiography revealed no difference in binary angiographic restenosis (13.9% vs 15.9%, P = .445) and late lumen loss (0.32 +/- 0.64 vs 0.35 +/- 0.63
Low responders had significantly more stent thromboses (2.5% vs 0.5%, HR 5.4, 95% CI 1.9-15.6, P = .002), Q wave myocardial infarctions (2.5% vs 0.6%, HR 4.0, 95% CI 1.5-10.7, P = .005), and ischemic strokes (1.3% vs 0.2%, HR 5.4, 95% CI 1.2-24.0, P = .028) at 1 year. Low platelet responsiveness to clopidogrel, a known predictor of thrombotic complications, does not have a significant impact on restenosis after DES.