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Switching patients from clopidogrel to prasugrel at the early phase of an acute coronary syndrome: impact of prasugrel reloading


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Purpose: There is no consensus on how to manage the switch from clopidogrel to prasugrel immediately after a clopidogrel loading dose (LD). The aim of this study was to evaluate the pharmacodynamic response of switching patients in this situation and comparing two prasugrel reloading doses (RD) by using three laboratory tests. Methods: Patients hospitalized for acute coronary syndrome (ACS) who received a 300 mg LD of clopidogrel before admission were referred for inclusion. Their platelet response to the P2Y12 inhibitor was tested with vasodilator-stimulated phosphoprotein phosphorylation (VASP), Verify Now assay and light transmission aggregometry (LTA) on admission (T1). Then, patients were immediately randomized for 2 RD of prasugrel (10 mg or 30 mg) and platelet response was tested again by the same methods (T2). Results: 20 patients were included in each group. All T1 and T2 analyses were performed during the first 24 hours after hospitalization. Compared with a 300 mg LD of clopidogrel, the proportion of patients with platelet hyporesponsiveness for VASP to the P2Y12 inhibitor was lower after the prasugrel RD: 8 vs 1 (p=0.001) in the 10 mg prasugrel group and 12 vs none (p≤0.001) in the 30 mg prasugrel group. Late adenosine diphosphate-induced platelet aggregation (LPA), by LTA was lower after a 30 mg prasugrel RD compared with a 10 mg RD (mean LPA 8 +/- 9 vs 14 +/- 12; p≤0.001). Similar results were found using VerifyNow P2Y12 (mean PRU 38 +/- 60 vs 87 +/- 71; p<0.001) and VASP assays (mean PRU 17 +/- 12 vs 33 +/- 15; p≤0.001). No bleeding events were reported during the hospital stay.

Conclusions: For patients receiving 300 mg clopidogrel therapy after an ACS, a 30 mg RD of prasugrel compared with a 10 mg RD is associated with further reduction in platelet function and markedly decreases the proportion of P2Y12 inhibitors low responders.

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Long-term dual antiplatelet treatment and clinical outcome of diabetic patients treated with drug-eluting stents

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Background: Despite encouraging short and mid-term results with drug-eluting stents (DES) in diabetic (DM) patients (pts) with coronary artery disease, the long-term efficacy is controversial. We assessed the influence of long-term dual antiplatelet treatment (DAPLT) with aspirin and clopidogrel on clinical outcome of DM pts treated with DES.

Methods: The study included 610 consecutive DM pts (male 80%, mean age 65±9 years) that had been treated with DES. Five years clinical follow-up (FU) obtained in 584/610 (96%) of them. At the end of follow-up, 341 (55%) pts were on DAPLT and 243 (42%) on single antiplatelet treatment (SAPLT). The primary end-point was the combination of death (D), non-fatal myocardial infarction (MI) and cerebrovascular accident (CVA), and was considered as hard end-point (HEP). Stent thrombosis (ST) occurring -12 months after DES implantation was considered as early (EST), and for >12 months, as late (LST). The ARC definition for ST was used.

Results: There was no difference in gender, age, risk factors profile, unstable coronary artery disease, insulin treatment, extent of coronary artery disease, and systolic left ventricular function between the two groups. At 12 months post PCI 546 (92%) pts were on DAPLT; the incidence of EST (definite or probable) was 0.8%. The incidence of LST (definite or probable) was 1.7%. There was no difference in the incidence of ST in pts treated with DAPLT vs. SAPLT (1.4% vs. 1.6%; p: ns). At FU, HEP was observed in 18% vs. 13%, in pts on DAPLT vs. SAPLT (p: ns).

Conclusion: Long-term DAPLT in DM pts treated with DES implantation is not associated with better clinical outcome or lower risk of definite or probable ST.

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Incidence and predictors of coronary stent thrombosis: evidence from an international collaborative meta-analysis including 32 studies, 222,752 patients, and 4490 thromboses

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Background: Stent thrombosis remains among the most feared complications of percutaneous coronary intervention (PCI) with stenting. However, data on its incidence and predictors are sparse and conflicting.

Objective: We aimed to perform a collaborative systematic review on incidence and predictors of stent thrombosis. PubMed was systematically searched for eligible studies from the drug-eluting stent (DES) era (1/2002-12/2010).

Methods: Studies were selected if including ≥2,000 patients undergoing stenting or reporting on ≥25 thromboses. Study features, patient characteristics, incidence and predictors of stent thrombosis were abstracted and pooled, when appropriate, with random-effect methods (point estimate [95% confidence intervals]).

Results: A total of 32 studies were identified (222,752 patients, 4,490 thromboses), with DES used in 89%. After a median of 22 months, definite, probable, or possible stent thrombosis had occurred in 2.3% (2.0%; 2.6%), with acute in 0.3% (0.2%; 0.5%), subacute in 1.0% (0.9%; 1.3%), late in 0.5% (0.4%; 0.6%), and very late in 0.6% (0.4%; 0.7%). Similar figures were computed for studies reporting only on DES, except for lower rates of acute ST (0.2% [0.1%; 0.2%]). From a total of 47 candidate variables, the most reliable predictors of definite/probable stent