



Acute Coronary Syndromes

THERAPEUTIC WINDOW FOR P2Y₁₂-RECEPTOR INHIBITION: A COLLABORATIVE ANALYSIS OF THE RELATION BETWEEN PLATELET REACTIVITY, STENT THROMBOSIS AND BLEEDING

Moderated Poster Contributions

Acute Coronary Syndromes Moderated Poster Theater, Poster Hall B1
Sunday, March 15, 2015, 10:00 a.m.-10:10 a.m.

Session Title: What's New in Platelet Activity?

Abstract Category: 2. Acute Coronary Syndromes: Clinical

Presentation Number: 1197M-05

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Background: Although residual platelet reactivity during treatment with P2Y₁₂-inhibitors is associated with stent thrombosis (ST) and bleeding, clinically validated, standardized cut-offs for platelet function testing are lacking. We sought to determine the prognostic impact of low (LPR), optimal (OPR), or high platelet reactivity (HPR) by applying standardized cut-off criteria in patients undergoing PCI treated with clopidogrel or prasugrel.

Methods: Authors of studies published before January 2014, reporting the association between platelet reactivity, ST and major bleeding were contacted for a collaborative analysis using *a priori* defined, uniform cut-off values for standardized platelet function assays. Based on the best available evidence (exploratory studies), LPR-OPR-HPR categories were defined as <95, 95-208 and >208 PRU for VerifyNow, <19, 19-46, and >46U for the Multiplate analyzer and <16, 16-50 and >50% for VASP assay.

Results: Fifteen studies including 18,169 patients were used for the analysis. Patients with HPR had a 2.6-fold higher risk of ST ($p<0.00001$) but a similar risk for bleeding ($p=0.053$) compared to those with OPR. In contrast, patients with LPR had a 1.8-fold higher risk for bleeding ($p<0.0001$), but identical risk for ST ($p=0.81$) as those with OPR. Mortality was 1.6-fold higher in patients with HPR compared to others ($p<0.001$). Validation cohorts confirmed the clinical relevance of cut-off values suggested by exploratory studies.

Conclusion: During thienopyridine treatment, mortality and ST is significantly higher in HPR, while LPR is a predictor of bleeding. Potential benefits of targeting OPR as a therapeutic window for P2Y₁₂-inhibition need to be confirmed in randomized trials.