Antiplatelet efficacy of prasugrel in patients with high on-clopidogrel treatment platelet reactivity and a history of coronary stenting.

Little is known about the antiplatelet action of the 3rd generation thienopyridine prasugrel in patients showing high platelet reactivity (PR) levels on clopidogrel. Thus, we aimed to determine the antiplatelet efficacy of prasugrel loading (LD) and maintenance dose (MD) treatment in a registry of patients with high PR levels on clopidogrel and a consecutive switch over to prasugrel in a setting of routine platelet function testing. In our registry of patients treated by percutaneous coronary intervention (n=73) with high levels of PR on clopidogrel, the ADP-induced platelet aggregation (PA, in AU x min) was assessed on a Multiplate analyser after clopidogrel LD, 2) after prasugrel LD and 3) on prasugrel MD (5 vs. 10 mg/day). In patients with high PR levels on clopidogrel, prasugrel LD resulted in significantly lower PA values (574 [462-698] vs. 156 [89-234] AU x min; p=468 AU x min) following prasugrel LD. On prasugrel MD, PA was significantly higher as compared to prasugrel LD (248 [145-406] vs. 156 [89-234] AU x min; p<0.0001) with more patients showing HPR on MD vs. LD (16.4% vs. 2.7%; p=0.009). For prasugrel MD, HPR rates were higher in 5 vs. 10 mg/day treated patients (46.2% vs. 10.0%; p=0.006). In conclusion, for patients with high PR levels on clopidogrel, prasugrel LD abolished this status in the majority of
patients. However, prasugrel response variability was detected, being more pronounced on prasugrel MD vs. LD treatment. The clinical impact of these findings warrants further investigation.