

Incidence of Clopidogrel Resistance by Vasodilator-Stimulated Phosphoprotein (VASP) in ACS

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Background: Clopidogrel is a potent platelet P2Y₁₂ receptor blocker, inhibiting ADP induced platelet activation. Its effective use after an acute coronary syndrome (ACS) is well established. Nonetheless, up to 30% of the population is reported to have preserved platelet aggregation even after high dose clopidogrel loading during ACS. The purpose of this study was to assess the incidence of clopidogrel resistance in northern Israel, an ethnically diverse area.

Methods: Platelet reactivity was measured using the VASP/P2Y₁₂ flow cytometric assay, the most specific platelet assay to evaluate P2Y₁₂ ADP receptor activity and thus the effect of clopidogrel on platelets. The test was performed on whole blood samples taken at least 48 hours after initiating Clopidogrel. Platelet reactivity index (PRI) $\leq 50\%$ was used as the cutoff value for poor responsiveness. Six month clinical outcomes will be determined.

Results: Preliminary data from 57 patients (50 men, 7 women, 35 Jews, 22 Arabs, mean age 62) presenting with ACS and treated with Clopidogrel showed that 38 (66.6%) patients had PRI $\leq 50\%$. These patients had slightly more risk factors for cardiac events than patients with PRI $< 50\%$ (3.7 vs 3.4 risk factors). There were significantly more Arab patients in the poor responders than in the good responders (44.7% vs. 26.3%, $p=0.03$). There was no significant difference between men and women ($p=0.06$), but significantly higher poor responders in the non-ST elevation ACS compared to ST elevation (63% vs. 52%, $p=0.045$).

Conclusions: We found significantly higher rates of Clopidogrel resistance in the Arab population compared to the Jewish population. Our data also suggest that the heterogeneous population of Northern Israel may express higher rates of Clopidogrel resistance than expected.