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QUALITY OF CARE AND OUTCOMES ASSESSMENT

THE FIRST DEMONSTRATION OF INFLUENCE OF RACE AND GENDER ON PLATELET REACTIVITY WITHIN CYP2C19 GENOTYPES

ACC Poster Contributions
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Background: High platelet reactivity (PR) and the CYP2C19 loss-of-function genotype are predictors of major adverse cardiac events in PCI patients. The influence of genotype on platelet function has not been compared between races and genders.

Methods: Data were analyzed from studies conducted on PCI patients treated with maintenance clopidogrel (75mg qd) and aspirin (100-325mg) in Korea and the United States. On-Treatment PR was determined by VerifyNow P2Y12 assay; and 20μM ADP-induced platelet aggregation (PA). Genotyping was performed by TaqMan® assay.

Results: 135 Caucasians (C), 46 African Americans (AA), and 201 Koreans (K) CAD patients were studied. ANOVA analysis demonstrated that PA, and P2Y12 Reaction Units (PRU) significantly differed between CYP2C19 metabolizer status in C and K (p=<0.05 Figure). C had the lowest mean PRU and PA amongst ethnicities with greatest difference observed within the extensive metabolizer group (p<0.02) whereas gender differences were observed in C only (p=0.05).

Conclusion: This is the first study to suggest that significant variability exists in platelet reactivity during dual antiplatelet therapy between race and gender and in the influence of genotype on platelet reactivity with respect to race. This should be explored in future studies investigating the role of genotype as a predictive variable.