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ASSOCIATION OF CYP2C19*2 TO ALTERED CLOPIDOGREL REACTIVITY AS MEASURED BY A POINT-OF-CARE ANALYSIS

i2 Poster Contributions
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Background: The CYP2C19*2 loss of function allele has been associated to adverse events post percutaneous coronary intervention (PCI). Point-of-care clopidogrel (CL) response analysis may screen genetically susceptible patients undergoing PCI.

Objective: To determine the association between CL unresponsiveness as measured by a point-of-care analysis and CYP2C19*2 in patients on CL therapy.

Methods: Patients on CL therapy were screened for analysis. Clopidogrel reactivity was measured using a Verify-Now P2Y12 assay. The CYP2C19*2 allele was determined using restriction fragment length polymorphism analysis. Patients on short-term CL (accumulated dose <1200mg) were compared those with long-term (≥1200mg).

Results: Of 103 patients, 72 (69.9%) were wild-type and 31 (30.1%) were carriers of CYP2C19*2 (28 heterozygous, 3 homozygous). CYP2C19*2 were identified in 12 of 59 responders (20.3%), compared to 19 of 44 non-responders (43.2%), p=0.017. In patients on short term CL, 34 of 64 patients had PRU>235, compared to 10 of 39 on long-term CL, p=0.008. Clopidogrel response versus duration of CL in patients with and without CYP2C19*2 allele suggest trend for dose dependent effect (Table).

Conclusions: Clopidogrel non-responders, identified by VerifyNow point-of-care assay, were associated to possession of at least one CYP2C19*2 allele. A high cumulative CL dose may overcome non-responsiveness in some patients with the CYP2C19*2 allele. These findings may have important therapeutic implications.

	Responders (PRU<235)	Non-Responders (PRU≥235)	TOTAL	p-Value
Wild Type				
≤1200mg accumulated clopidogrel dose	25	20	45	0.04
>1200mg accumulated clopidogrel dose	22	5	27	
CYP2C19*2				
≤1200mg accumulated clopidogrel dose	5	14	19	0.130
>1200mg accumulated clopidogrel dose	7	5	12	