EFFECTS OF C34T GENOTYPE ON ARTERIAL STIFFNESS IN PATIENTS WITH CORONARY ARTERY DISEASE RECEIVING CLOPIDOGREL

Poster Contributions

Hall C
Saturday, March 29, 2014, 3:45 p.m.–4:30 p.m.

Session Title: Stable Ischemic Heart Disease: Basic Science I
Abstract Category: 24. Stable Ischemic Heart Disease: Basic
Presentation Number: 1156-328

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**Background:** The clinical benefit of clopidogrel has been attributed to its inhibition of platelet activation and aggregation. The active metabolite of clopidogrel binds to the platelet P2Y12 receptors to irreversibly inhibit adenosine diphosphate (ADP)-stimulated platelet aggregation. Though, clopidogrel treatment has also pleiotropic vasoprotective effects, such as modulation of vascular tone and improvement of vascular function. We tested the impact of C34T polymorphism of P2Y12 ADP receptor on arterial stiffness in patients with coronary artery disease (CAD) treated with clopidogrel regimen.

**Methods:** We consecutively enrolled 229 patients with CAD, receiving clopidogrel regimen (75mg/d), one month after percutaneous coronary intervention (PCI). Carotid-femoral pulse wave velocity (PWV) was measured as an index of arterial stiffness. C34T genotyping was performed by real-time polymerase chain reaction.

**Results:** In the total study population, 124 patients (54%) were carriers of at least one C34T reduced-function allele and 105 patients (46%) were non carriers. There was no statistically significant difference between carriers and non-carriers in age, male sex and the presence of dyslipidemia, diabetes mellitus, arterial hypertension and in smoking habits. Importantly, carriers of at least one C34T reduced-function allele had higher PWV, compared with non-carriers (8.9±2.1% vs. 8.3±2.08%, p=0.041).

**Conclusion:** C34T polymorphism is associated with arterial wall properties in patients with CAD treated with clopidogrel. These finding support the notion that clopidogrel indirectly, via its active metabolite action on P2Y12 ADP receptor, may exerts the beneficial effects on vascular function. Moreover, as measurement of arterial stiffness is well validated in large population studies as strong predictor of adverse cardiovascular outcomes, the identification of the C34T reduced-function allele may be useful in the risk stratification of patients after PCI receiving clopidogrel.