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Stable Ischemic Heart Disease

IMPACT OF LOADING- VERSUS MAINTENANCE-DOSE CLOPIDOGREL ON PLATELET AGGREGATION IN CHINESE WITH DIFFERENT CYP2C19 GENOTYPES: A PROSPECTIVE OBSERVATIONAL FACTORIAL TRIAL

Poster Contributions
Hall C
Monday, March 31, 2014, 9:45 a.m.-10:30 a.m.

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Authors: *Xiao-Xing Zhang, Li-Rong Yan, Dongxue Wang, Lulu Han, Yan Li, Lei Tian, Hong Liu, Yi-Shi Li, Key Laboratory of Clinical Trial Research in Cardiovascular Drugs,Ministry of Health,Fuwai Hospital, Beijing, People's Republic of China*

Background: Two clopidogrel pretreatment strategies prior to elective percutaneous coronary intervention (PCI) are currently available in clinical practice: a loading-dose (LD) strategy of 300 mg bolus orally in clopidogrel-naïve patients and a maintenance-dose (MD) strategy of 75 mg orally once daily in patients undergoing chronic clopidogrel therapy. We compared the antiplatelet effects of these two strategies in patients with different CYP2C19 genotypes.

Methods: A total of 840 Chinese Han patients undergoing PCI were assigned to 2X2 groups in the prospective observational factorial designed RDPAC (Relationship between the pretreatment Dose of clopidogrel and Platelet Aggregation in Chinese with different CYP2C19 genotypes) trial according to different clopidogrel pretreatment strategies (370 patients in the 75-mg MD group versus 470 patients in the 300-mg LD group) and CYP2C19 genotypes (494 carriers of any CYP2C19 *2 or *3 loss-of-function allele versus 346 non-carriers). The primary outcome was platelet aggregation (PA) as measured by the 10 μmol/L adenosine diphosphate induced light transmission aggregation between the different groups. (ClinicalTrials.gov number NCT01710436)

Results: Compared with the MD group, the LD strategy showed a significantly higher on-treatment PA (59.22±11.67% vs. 52.83±12.17%, P<0.001), similar results were observed in the CYP2C19 loss-of-function carriers compared with the non-carriers (59.41±10.91% vs. 52.10%±12.90%, P<0.001). The patients treated with the LD strategy in either the CYP2C19 loss-of-function carrier or non-carrier group showed a significantly higher PA compared with the MD group (61.50±10.61% vs. 56.84±10.74%, P<0.001; 56.06±12.34% vs. 46.88±11.78%, P<0.001, respectively).

Conclusions: A 300-mg LD results in a higher on-treatment PA compared with the 75-mg MD in Chinese Han patients receiving clopidogrel prior to PCI, regardless of the CYP2C19 *2 or *3 loss-of-function allele carriage. The PA difference from the clopidogrel pretreatment strategy should be considered in further study designs and in clinical practice.