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PERSONALISED ANTIPLATELET THERAPY ACCORDING TO CYP2C19 GENOTYPE AFTER PERCUTANEOUS CORONARY INTERVENTION IN CHINESE POPULATION: A RANDOMISED CONTROL TRIAL

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Objectives The purpose of this study was to compare personalised antiplatelet therapy according to CYP2C19 phenotype with conventional antiplatelet therapy in patients after percutaneous coronary intervention (PCI).

Background Recent studies have demonstrated that the patients carrying CYP2C19 loss-of-function alleles had a higher rate of subsequent cardiovascular events including stent thrombosis (ST).

Methods A total of 600 patients undergoing primary PCI randomly received a personalised antiplatelet therapy (group A; n=301) or conventional antiplatelet treatment (group B; n=299). For group A, antiplatelet therapy was performed according to CYP2C19 phenotype. For group B, the patients received conventional antiplatelet treatment without detected CYP2C19 genotype. The primary endpoint was the incidence of ST within 180 days following PCI. The secondary endpoint was other adverse clinical outcomes including MI, death and bleeding events within 180 days after the procedure.

Results The cumulative 180-day incidence of ST was significantly lower in group A than that in group B (0.66% vs 3.01%, $p=0.032$). 180-day incidence of MI (0.33% vs 3.01%, $p=0.011$) and death (0.33% vs 2.34%, $p=0.011$) was fewer than those in control, respectively. We did not find the significant difference in bleeding events between the 2 groups.

Conclusions Personalised antiplatelet therapy according to CYP2C19 Genotype after PCI can significantly decrease risk of 180-day ST and major adverse cardiovascular events in Chinese population.