Comment on "Association between CYP2C19 and ABCB1 polymorphisms and clopidogrel resistance in clopidogrel-treated Chinese patients"

To the Editor,

We read the article entitled "Association of CYP2C19 and ABCB1 polymorphisms with clopidogrel resistance in clopidogrel-treated Chinese patients" by Zhuo et al. (1) published in Anatol J Cardiol 2018; 19: 123-9. It is highly appreciated that there is an increasing number of researches to explore the paradigm of gene polymorphisms behind abnormal clinical manifestations, especially for drug resistance, because a variety of problems were encountered during the large-scale use of many classical drugs (2). As an ideal adenosine diphosphate (ADP) receptor antagonist with quick effects and high security, clopidogrel has been widely used in the prevention of myocardial infarction, stroke, atherosclerosis, and other related diseases for several years; however, at the same time, clopidogrel resistance has brought much trouble to classical ischemic events (3).

Kar et al. (4) reported that clopidogrel resistance was not associated with ADP receptor P2Y1 and P2Y12 gene polymorphisms. Rebrova et al. (5) demonstrated that there was no association between the risk of clopidogrel resistance and the presence of polymorphic variants of platelet receptor genes P2RY12 and GpIII. However, Li et al. (6) reported that a positive correlation might exist between PIK3CG SNPs (rs1129293 and rs17398575) and patients unresponsive to clopidogrel. In the present article, authors concluded that the presence of the CYP2C19*2 or *3 mutant allele was significantly associated with attenuated platelet response to clopidogrel and increased risk of clopidogrel resistance, although there was no obvious connection between presence of ABCB1 mutant allele and risk of clopidogrel resistance. Overall, this paper, which gives new sight into the discovery of clopidogrel resistance, provides a potential basis for future CYP2C19 and ABCB1 targeted gene therapy. However, some problems in this article may affect obtaining reliable results. First, the sample size of the experimental group was relatively small and the authors did not demonstrate the results of the control group. Then, because patients in the experimental group suffered from ischemic disease and took various drugs according to the inclusion criteria, cross-effects of these drugs on platelet were not investigated and thus the identification of patients resistant to clopidogrel might be disturbed . Finally, without the influence of drug and disease type, analysis of healthy participants may help obtain more reliable results; however, the authors did not provide these results.

Rapid development of biological techniques has brought investigation of life science into a new era of gene, and the secrets of many biological phenomena were finally uncovered to be controlled by gene abnormality. In the past, gene mutations were being discussed for special biological effects, whereas gene polymorphisms, which played a vital role in the susceptibility of many diseases among diverse ethnicities, were more prevalent than mutations. Among various biological roles of gene polymorphisms, its relationship with drug resistance helps explain the multifarious drug sensitivity for each individual and provides a strong basis for individual-based gene-targeted therapy in the future.

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Accepted Date: 24.12.2017

DOI:10.14744/AnatolJCardiol.2017.27020