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Journal of the Medical Association of Thailand, Vol 96, No 5

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High On-Clopidogrel Treatment Platelet Reactivity in Thai Patients with Chronic Stable Angina Scheduled for Percutaneous Coronary Intervention

Rewat Phankingthongkum, Pradit Panchavinnin, Yingyong Chinthammitr, Damras Tresukosol, Chunhakasem Chotinaiwattarakul, Wiwun Tungsubutra, Nattawut Wongpraparut, Bussakorn Kittrattana, Piyachat Leewanun

Abstract

Objective: To determine the prevalence, clinical profile, and risk factors of high on-clopidogrel treatment platelet reactivity in Thai patients with chronic stable angina scheduled for percutaneous coronary intervention.

Material and Method: The patients were prospectively recruited from the consecutive patients undergoing coronary angiography and planned for elective percutaneous coronary intervention (PCI). Ten ml of blood samples were cautiously drawn from the antecubital vein of the patients to determine the hemoglobin and platelet count. Platelet aggregation test was performed by light transmittance aggregometry using platelet-rich plasma. Platelets were stimulated with 5 μ M adenosine diphosphate (ADP). Platelet aggregation was expressed as the maximal percent change in light transmittance from baseline. High on-clopidogrel treatment platelet reactivity was defined as post treatment maximal platelet aggregation >46% with 5 μ mol/l ADP used as agonist.

Results: The present study consecutively enrolled two hundred four patients diagnosed with chronic stable angina planned for PCI. Seventy-nine patients demonstrated the high on-clopidogrel treatment platelet reactivity (38.7%). Among these patients, 48% were men with a mean age of 66 years. Diabetes mellitus and chronic kidney disease were detected in 34.2%. Original clopidogrel (Plavix®) was prescribed in 72% of the patients and 28% received generic clopidogrel (Apolets®). The prevalence of high on-clopidogrel treatment platelet reactivity increased in the older patients, patients with CKD and patients receiving angiotensin receptor blockers (ARB). However, from multivariate analysis, none of the risk factors, including age, BMI, diabetes mellitus, smoking, CKD, ARB use, and type of clopidogrel (Plavix® versus Apolets®) had a statistically significant association with the high on-clopidogrel treatment platelet reactivity.

Conclusion: The prevalence of high on-clopidogrel treatment platelet reactivity in the present study was 38.7%. No significant association was demonstrated between age, BMI, diabetes mellitus, smoking, CKD, ARB use, type of clopidogrel, and high on-clopidogrel treatment platelet reactivity.

Keywords: High on-clopidogrel treatment platelet reactivity, Clopidogrel resistance, Clopidogrel non-responsiveness, Clopidogrel, Platelet aggregation

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The Medical Association of Thailand

Address: 4th Floor, Royal Golden Jubilee Building, 2 Soi Soonvijai, New Petchburi Road, Bangkok 10310, Thailand
Telephone: 0-2716-6102, 0-2716-6962 press 0 Fax: 0-2314-6305

E-mail: jmedassocthai@yahoo.com, math@loxinfo.co.th 