中文題目：ABCD-GENE-PAD Score 於周邊動脈阻塞亞洲病患血管介入術後之效力與驗證

英文題目：Utility of ABCD-GENE-PAD Score in Asian Patients with Peripheral Arterial Disease Undergoing Endovascular Interventions

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Background: The importance of managing peripheral arterial disease (PAD) has been increasing worldwide. Despite being the guideline-recommended therapy, the use of clopidogrel remains a concern in Asian populations due to the high prevalence of cytochrome P450 2C19 polymorphism-related drug resistance. The Age, Body Mass Index, Chronic Kidney Disease, Diabetes, and Genotyping (ABCD-GENE) score that incorporates clinical and genetic factors has recently helped identify patients with coronary arterial disease at risk for high platelet reactivity and cardiovascular adverse events. However, the benefit of this score in asian population with PAD remains uncertain. This study aimed to validate the ABCD-GENE score and, if needed, modify it to improve prediction of clopidogrel response in Asian patients with peripheral arterial disease undergoing endovascular interventions.

Methods: Clinical data and genetic CYP2C19 polymorphisms in 473 patients with PAD were prospectively collected from two medical centers in Taiwan. All patients received Clopidegral (≥3 months) after endovascular intervention. The mean follow-up duration was 25 months. Major adverse limb events (MALEs) included amputation and revascularization. Sensitivity and specificity of the score in predicting outcomes were determined. Scoring efficiency was validated using an external cohort.

Results: Old age, underlying diabetes mellitus (DM), chronic kidney disease (CKD), and CYP2C19 polymorphisms were significantly associated with the development of MALEs. Obesity, which is included in the ABCD-GENE score, was not. Bootstrap regression analysis established a modified risk score (ABCD-GENE-PAD) that included old age (≥65 years), DM, CKD, and CYP2C19 polymorphisms. Both the conventional and modified scores were positively associated with MALEs. At a cut-off value of 8, the ABCD-GENE-PAD score was superior to the conventional ABCD-GENE score in predicting MALEs (OR:3.92; 95% CI:2.52-6.08, p=0.001). Receiver operating characteristic curve analyses demonstrated that the ABCD-GENE-PAD score significantly predicted MALEs during clopidogrel therapy (AUC 0.74, p<0.001). In the external validation cohort, the diagnostic ability and cut-off values of the ABCD-GENE-PAD score for MALEs on clopidogrel were consistent.

Conclusions: The ABCD-GENE score was significantly associated with MALE development in patients treated with clopidogrel. The modified ABCD-GENE-PAD score was superior in

differentiating patients at risk of MALEs and may help clinicians make better decisions in antithrombotic therapy after endovascular intervention. Further validation is require to evaluate its clinical utility.