

## Profile of Platelet Aggregation in Coronary Artery Disease Patients Using Clopidogrel Based on CYP2C19\*2 Polymorphisms and Patient Characteristics

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### INTRODUCTION

Clopidogrel as antiplatelet was proven effectively reduce morbidity and mortality in Coronary Artery Disease (CAD) patients. Despite that benefit, there was some variation in antiplatelet response in some patients. Factors contributing in response to clopidogrel variability were: genetic polymorphisms, age, body mass index, and compliance. Clopidogrel response can be measured with platelet aggregation using Light Transmission Aggregometry (LTA).

### OBJECTIVES

The aim of our study was to evaluate platelet aggregation based on genetic polymorphism of CYP2C19\*2 and patient characteristics (age, sex, body mass index).

### MATERIALS AND METHODS

Platelet aggregation was measured by LTA. Aggregation was induced by Adenosine Diphosphate (ADP). CYP2C19\*3 polymorphisms were identified using Polymerase Chain Reaction (PCR) and electrophoresis. CAD patients that have high compliance on drug therapy (based on measurement with Morisky Medication Adherence Scale) were enrolled for this research. Patient characteristics (age, sex, body mass index) were assessed from their medical record from the hospital. Chi square was used for analyze relationship between platelet aggregation and CYP2C19\*3 polymorphisms and patient characteristics.

### RESULTS

This study involved 21 CAD patients who treated with clopidogrel in cardiology clinic in X hospital. 19 CAD patients (90%) showed hypo-aggregation and 2 CAD patients (10%) showed normal-aggregation in LTA using ADP as inducer. Patient characteristics can be shown as: age (45-49 years, 50-54 years: 2 patients (9.1%) respectively, 55-59 years: 1 patient (4.5%) , 60-64 years, 65-69 years, 70-74 years: 4 (18.2%) ,3 (27.33%), and 2 patients (9.1%) respectively, sex (14 male patients (64%) and 5 female patients (36%)), body mass index (2 patients underweight (9.1%), 4 normal (18.2%), 3 patients overweight (13.7%), and 10 patients (59%) can be classified as obese) Study result showed that the polymorphism of CYP2C19\*2 did not found in 21 patients and there was no significant correlation between age, sex, and body mass index with platelet aggregation.

### CONCLUSION

Our results suggest that there was no significant correlation between platelet aggregation and patient characteristics.