P-114

Whole-Blood Aggregation Test Stimulated by ADP for Evaluation of Blood Aggregation Activity in Kawasaki Disease Patients with Anti-Platelet Management.

Suzuki C., Yahata T., Hamaoka A., Fujii M., Ozawa S., Hamaoka K.
Department of Paediatric Cardiology and Nephrology, Kyoto Prefectural University of Medicine Graduate School of Medical Science, Kyoto, Japan

Introduction:
It is a very critical issue to evaluate the efficacy of anti-platelet agents by any monitoring system because there is individually any significant difference in responsibility to anti-platelet agents. Recently, the aspirin resistance has been identified as one of the topics. We have already measured the platelet function in patients of Kawasaki disease (KD), and also reported that the analysis with whole blood aggregation have some superiorities over platelet-rich plasma (PRP) aggregation method which is a conventional method. The stimulus was used collagen since we focused on aspirin. However, aspirin is often combined with different types of anti-platelet drugs, thienopyridine, in KD patients with any coronary lesion. This study comprehensively evaluated the effect of all anti-platelet agents administered by whole-blood aggregation using adenosine diphosphate (ADP) which is available for judging the efficacy of aspirin and thienopyridine compound.
Methods
The subjects were 48 patients late after KD. Twenty-nine patients had received the anti-platelet therapy mainly with aspirin for coronary artery lesions (CALs), and the remaining not received any medication because they did not have any CALs. Whole-blood aggregation was analyzed using collagen and ADP as the stimulus and was compared with the PRP aggregation measured using collagen as the stimulus with an optical aggregometer. Whole-blood aggregation was evaluated on the basis of the platelet-aggregation threshold index (PATI), which was defined as the putative agonist-concentration giving half-maximal-aggregation. PRP aggregation was categorized into 5 classes; -2, -1, 0, +1, and +2.
Results
We found a significant negative correlation between the whole-blood PATI stimulated with collagen or ADP and the PRP aggregation class stimulated with collagen. (collagen: -0.76, ADP: -0.59) In addition, PATI was significantly decreased in subjects with the combination therapy including any thienopyridine agent when compared with that of all the subjects did not receive any thienopyridine agent. ($p<0.01$)
Conclusions
This study revealed that the whole-blood aggregation using ADP as the stimulus contributed to the efficacy of aspirin in KD patients. Furthermore, it may be clinically useful for the comprehensive evaluation of anti-platelet therapy including thienopyridine agents.