Objectives: Responsiveness to clopidogrel is characterized by large variability in platelet inhibition among patients. Suboptimal response to clopidogrel is known to be associated with higher risk for subsequent cardiovascular ischaemic events such as in-stent thrombosis or recurrent acute coronary syndrome (ACS). We sought to evaluate correlation of platelet count and mean platelet volume (MPV) with low clopidogrel response in patients with acute coronary syndrome undergoing percutaneous coronary intervention (PCI).

Patients and Methods: We enrolled 359 consecutive ACS patients in the study. Patients with thrombocytopenia, suboptimal PCI and those who received glycoprotein IIbIIIa antagonists during and/or after PCI were excluded (120 patients). Residual platelet activity specific to clopidogrel was measured using Multiplate® function analyzer — a point of care instrument which determines platelet function in small quantities of whole blood.

Results: Fifty-three patients (22.2%) had suboptimal response to clopidogrel. Average platelet number and MPV in patients with decreased response was 240.8x10⁹/L (SD ± 52.40) and 9.63 fl (SD ± 1.00), respectively. Patients with normal or increased response had average platelet number of 226.6x10⁹/L (SD ± 53.02) and average MPV 9.3 fl (SD ± 0.91). There was no statistically significant difference in total platelet number (P=0.07) nor MPV values (P=0.13) between low responders and other patients.

Conclusion: MPV and total platelet number are not associated with low response to clopidogrel after successful PCI in ACS.

KEYWORDS: acute coronary syndrome, clopidogrel, mean platelet volume.

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