Suboptimal platelet response to clopidogrel after percutaneous coronary intervention in patients with acute coronary syndrome is not associated with total platelet count and mean platelet volume

Jure Samardžić^{1*}, Miroslav Krpan¹, Marija Brestovac², Boško Skorić¹, Maja Čikeš¹, Mate Petričević¹, Davor Miličić¹

¹University of Zagreb School of Medicine, University Hospital Centre Zagreb, Zagreb, Croatia

²Dr. Andrija Štampar Institute of Public Health, Zagreb, Croatia

Objectives: Responsiveness to clopidogrel is characterized by large variability in platelet inhibition among patients.¹ 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)^{2,3}. 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 IIb/IIIa 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 $240.8 \times 10^9/L$ ($SD \pm$

52.40) and 9.63 fL ($SD \pm 1.00$), respectively. Patients with normal or increased response had average platelet number of $226.6 \times 10^9/L$ ($SD \pm 53.02$) and average MPV 9.3 fL ($SD \pm 0.91$). 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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*Address for correspondence: Klinički bolnički centar Zagreb, Kišpatićeva 12, HR-10000 Zagreb, Croatia.

Phone: +385-1-2367-467

E-mail: jure.samardzic@gmail.com

Figure 1.
Patient selection.

Literature

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