

## Platelet reactivity unit (PRU) in patients undergoing elective PCI: Rethinking the optimal cut point

To the Editor,

High residual platelet reactivity (PR) in patients on clopidogrel therapy is associated with thrombotic events after percutaneous coronary intervention (PCI) with drug-eluting stents. It is well documented that determining an optimal PR cut-off point helps to better predict major adverse cardiovascular events (MACE). In addition, determining the optimal PR cut-off point helps to sufficiently suppress the platelet aggregation to prevent thrombotic events after PCI. However, the measurements of platelet function in patients on clopidogrel therapy have indicated wide variability in P2Y12 inhibition level (1), which is relatively explicated by genetic polymorphisms encoding CYP2C19 as well as the hepatic enzyme CYP450. In this regard, several studies have selected different PR cut-off points to identify high-risk patients. For example, in a study with 660 patients, Nakamura et al. (2) found that the optimal platelet reactivity unit (PRU) cut-off point for preventing MACE after PCI is 262. In another study by Marcucci et al. (3), the PRU cut-off point of 240 was shown to be predictive of MACE. Koltowski et al. (4) considered the PRU cut-off point of 208 PRU (measured using the VerifyNow P2Y12 assay) as inadequate platelet inhibition.

Much inconsistency exists in the literature concerning the selection of optimal PR cut-off point in patients on clopidogrel therapy undergoing elective PCI. It is important that the optimal PRU cut-off point in patients treated with clopidogrel has not been discussed in the 2011 American College of Cardiology (ACC) / American Heart Association Guideline for PCI (5). Therefore, selecting the optimal PRU cut-off point warrants further investigations. The optimal PRU cut-off point should be studied and integrated in the current clinical practice guidelines so that it becomes a standard of practice for PCI.

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### References

1. Stone GW, Witzensichler B, Weisz G, Rinaldi MJ, Neumann FJ, Metzger DC, et al. Platelet reactivity and clinical outcomes after coronary artery implantation of drug-eluting stents (ADAPT-DES): a prospective multicentre registry study. *Lancet* 2013; 382: 614-23.
2. Nakamura M, Isshiki T, Kimura T, Ogawa H, Yokoi H, Nanto S, et al. Optimal cut-off value of P2Y12 reaction units to prevent major adverse cardiovascular events in the acute periprocedural period: Post-hoc analysis of the randomized PRASFIT-ACS study. *Int J Cardiol* 2015; 182: 541-8. [[CrossRef](#)]
3. Marcucci R, Gori AM, Panizza R, Giusti B, Valente S, Giglioli C, et al. Cardiovascular death and nonfatal myocardial infarction in acute coronary syndrome patients receiving coronary stenting are predicted by residual platelet reactivity to ADP detected by a point-of-care assay: a 12-month follow-up. *Circulation* 2009; 119: 237-42.
4. Koltowski L, Tomaniak M, Aradi D, Huczek Z, Filipiak KJ, Kochman J, et al. Optimal antiplatelet pharmacotherapy guided by bedside genetic or functional TESTING in elective PCI patients: A pilot study: ONSIDE TEST pilot. *Cardiol J* 2017 Mar 10. Epub ahead of print.
5. Levine GN, Bates ER, Blankenship JC, Bailey SR, Bittl JA, Cercek B, et al. 2011 ACCF/AHA/SCAI Guideline for Percutaneous Coronary Intervention: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines and the Society for Cardiovascular Angiography and Interventions. *Circulation* 2011; 124: e574-651. [[CrossRef](#)]

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