Acute and Stable Ischemic Heart Disease

THROMBIN-INDUCED CLOT STRENGTH AND PLATELET REACTIVITY FOR PREDICTION OF MAJOR CARDIOVASCULAR EVENTS FOLLOWING PERCUTANEOUS CORONARY INTERVENTION

Poster Contributions
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Background: High on-treatment platelet reactivity (HPR) is a well-known risk factor for adverse CV events after PCI. The hypercoagulability can be associated with clinical outcomes in patients with CVD. We investigate the prognostic value of platelet reactivity and thrombin-induced clot strength after PCI.

Methods: We evaluated 1,702 patients undergoing PCI who had both platelet reactivity and hypercoagulability index. Platelet reactivity was indicated with PRU (measured by VerifyNow) and thrombin-induced clot strength was indicated with MAthrombin (measured by thromboelastography). MACE was a composite of CV death, MI, and stroke.

Results: During the follow-up (median, 23 months), MACE was more frequently occurred in patients with HPR (≥235 PRU) (8.6% vs. 6.3% at 3 years; HRadj: 1.67; 95% CI: 1.14 - 2.43; P = 0.008) (Fig. A). Moreover, patients with elevated thrombin-induced clot strength (MAthrombin ≥68mm) were at higher risk for the occurrence of MACE (9.6% vs. 5.3% at 3 years; HRadj: 1.49, 95% CI: 1.02 - 2.17; p = 0.037) (Fig. B). The combination of HPR and high MAthrombin showed the incremental discriminative value for predicting MACE than HPR or MAthrombin alone (Fig. C).

Conclusion: In PCI-treated patients, platelet reactivity and hypercoagulability independently determine atherothrombotic events. This observation might suggest the clinical usefulness of combination treatment with P2Y12 inhibitor and anticoagulant to improve the clinical outcome in patients with high-risk CV disease.