

Platelet function tests may provide modest benefit in predicting cardiac outcomes

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An analysis of six tests that are used to measure platelet function and help gauge the effectiveness of antiplatelet drugs for patients undergoing a cardiac procedure such as a coronary stent implantation found that only three of the tests were associated with a modest ability to predict outcomes such as heart attack or death, according to a study in the February 24 issue of *JAMA*.

Dual antiplatelet therapy with aspirin and [clopidogrel](#) (antiplatelet agent used to inhibit [blood clots](#)) reduces atherothrombotic (vascular obstruction) complications in patients undergoing percutaneous [coronary intervention](#) (PCI; procedures such as balloon angioplasty or stent placement used to open narrowed coronary arteries) with stenting. However, the individual response to dual antiplatelet therapy is not uniform, according to background information in the article. There currently is no consensus regarding the most appropriate method to quantify the magnitude of effect an antiplatelet agent may have on platelet reactivity.

Nicoline J. Breet, M.D., of St. Antonius Hospital and St. Antonius Center for Platelet Function Research, Nieuwegein, the Netherlands, and colleagues conducted a study to evaluate the ability of multiple platelet function tests to predict atherothrombotic events, including stent [thrombosis](#) (blood clot within the stent), in 1,069 clopidogrel-pretreated patients undergoing elective coronary stent implantation. Using blood samples, platelet reactivity was measured in parallel with six platelet function tests. The primary outcome measured was a composite of all-

cause death, nonfatal heart attack, stent thrombosis and [ischemic stroke](#).

The researchers found that at 1-year follow-up, the primary outcome occurred more frequently in patients with high platelet reactivity when assessed by the tests light transmittance aggregometry, VerifyNow and Plateletworks, which also had modest ability to discriminate between patients having and not having a primary event. The three other testing methods (IMPACT-R, Dade PFA collagen/ADP, and Innovance PFA P2Y) were unable to discriminate between patients with and without the primary outcome. None of the tests identified patients at risk for bleeding.

"In conclusion, of the platelet function tests assessed, only light transmittance aggregometry, VerifyNow, and Plateletworks were significantly associated with the primary end point. However, the predictability of these 3 tests was only modest. None of the tests provided accurate prognostic information to identify patients at higher risk of bleeding. Thus, [this study] does not support the use of platelet function testing to guide clinical practice in a low-risk population of patients undergoing elective PCI," the authors write.

More information: JAMA. 2010;303[8]:754-762.

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