

血小板機能アッセイ—役立つものもあれば役に立たないものもある

POPULAR：検査により血管形成術とステント留置施行後の抗血栓療法に抵抗性の患者が予知できる

POPULAR: Tests predict which patients are resistant to anti-clotting therapy during angioplasty plus stenting

血小板機能検査6つのうち3つは血管形成術（PCI）およびステント留置術を施行された患者の血栓関連の有害事象リスクを予測することができると2009年 American Heart Association学会で報告された。POPULARトライアルは抗血栓薬投与中患者における血小板機能検査をhead-to-headで比較した初めてのものである。研究者らはPCIおよびステント留置術を施行された1,069人の連続した患者を対象に、6つの血小板機能検査を比較した。一次エンドポイントは総死亡、心筋梗塞、緊急血行再建術施行、脳卒中またはステント血栓の合計であった。1年間の観察後に3つの検査（Light Transmittance Aggregometry、VerifyNow-P2Y12TMカートリッジ、およびPlateletworksTMアッセイ）で血小板機能が高かった患者は総一次エンドポイント発現率が高かった（12.1%対6%）。他の3つの検査による評価の予後予知能は不良であった。研究者らは、待機的血管形成術およびステント留置術を施行する患者全てにおいて血小板機能検査を行い血栓関連合併症のハイリスク患者を検出するのは有用であると述べている。

Full Text

Three platelet function tests all identified heart patients who will have high platelet reactivity, increasing heart attack risk, despite being pre-treated with aspirin and clopidogrel before coronary stenting, researchers reported at the American Heart Association's Scientific Sessions 2009.

POPULAR (Do platelet function assays predict clinical outcomes in clopidogrel pre-treated patients undergoing elective PCI) is the first head-to-head comparison of tests for platelet reactivity despite anti-clotting medication.

Specifically, it examines which of the many tests available best predicts thrombotic complications, such as myocardial infarction and stroke, in patients pre-treated with aspirin and clopidogrel who then undergo percutaneous coronary intervention (PCI) with stent implantation, said Jurrien M. ten Berg, M.D., Ph.D., an interventional cardiologist at St. Antonius Hospital, Nieuwegein, the Netherlands, and senior investigator of the study.

"Only a minority of centers routinely uses platelet reactivity testing to guide therapy, but it is used extensively as a research tool," he said. "I think we are on the brink of making platelet reactivity a clinical tool."

Dual antiplatelet therapy with aspirin and clopidogrel is used for its ability to reduce clot-related complications of PCI. But in some studies a significant number (30-40 percent) of patients are resistant to the treatment and are at risk of clot-related complications even after that treatment, said ten Berg.

Researchers haven't conducted a large study comparing the many tests that check platelet reactivity, said Nicoleline J. Breet, M.D., presenter of the study and a Ph.D. fellow and cardiologist-in-training at St. Antonius Hospital.

In POPULAR, researchers compared six different tests of platelet reactivity in 1,069 consecutive patients undergoing angioplasty with stent placement and included one-year follow-up. The primary endpoint was a composite of all-cause death, heart attack, urgent revascularization, stroke or stent thrombosis, ten Berg said. Patients who had high platelet reactivity (HPR) on three of the tests -- the Light Transmittance Aggregometry (LTA), the VerifyNow-P2Y12TM-cartridge and the PlateletworksTM assay - had a significantly greater incidence of the combined primary endpoint (12.1 percent vs. 6 percent) at one year compared to patients who did not, ten Berg said. Three other tests evaluated didn't predict outcomes. Of the three predictive tests, the LTA is the most labor-intensive and can't be performed at bedside, and PlateletworksTM must be done within 10 minutes of drawing blood, ten Berg said. The third test, VerifyNow-P2Y12TM does not have those limitations, he said.

In conclusion, it is useful to test the response to antiplatelet therapy in all patients undergoing elective angioplasty plus stent placement to identify those patients at highest risk for clot-related complications," ten Berg said. These results have not yet been extended to demonstrate that basing additional treatment(s) on the test results would improve patient outcomes in those at higher risk.

Study sponsor: The study received no funding. Siemens Healthcare Diagnostics provided the Dade[®] PFA Collagen/ADP Test Cartridge and the novel INNOVANCE[®] PFA P2Y* free-of-charge.

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