# 30-day results of ADAPT-DES registry reported at TCT 2011

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The relationship of platelet responsiveness to antiplatelet medications; and, the correlation of poor response, and overall platelet aggregation while on dual antiplatelet therapy to the risk of drug-eluting stent thrombosis after 30 days was examined in ADAPT-DES, the largest registry to date to fully examine these relationships.

Results of ADAPT-DES (Assessment of Dual AntiPlatelet Therapy with Drug-Eluting Stents) were presented today at the 23rd annual Transcatheter Cardiovascular Therapeutics (TCT) scientific symposium, sponsored by the Cardiovascular Research Foundation.

While prior studies have emphasized the absolute level of platelet activation/aggregation to antiplatelet medications, the role of the baseline level of platelet activation and the percentage of platelet inhibition in response to these therapies have largely been unstudied prior to ADAPT-DES.

In addition, the impact of poor platelet response to aspirin, and overall platelet aggregation while on dual antiplatelet therapy (DAPT) on the risk of stent thrombosis has not been fully examined.

In the registry, 8,575 patients undergoing percutaneous coronary intervention (PCI) with drug-eluting stents were enrolled at 11 sites between January 2008 and September 2010. The researchers assessed platelet reactivity to aspirin and clopidogrel as well as overall platelet responsiveness with the VerifyNow Aspirin, P2Y12, and IIb//IIIa tests

after successful implantation of drug-eluting stents. Definite or probable stent thrombosis occurred in 39 patients (0.46%) after 30 days.

The researchers found that absolute and relative levels of platelet inhibition in response to ADP antagonists as assessed by the VerifyNow P2Y12 test are powerful independent predictors of stent thrombosis within 30 days, with a significant proportion of events independently attributable to clopidogrel hyoporesponsivenes.

In contrast, the baseline level of platelet P2Y12 response, as well as aspirin and overall platelet responsiveness after DAPT loading as assessed by VerifyNow were not shown to be related to the 30-day rate of stent thrombosis.

"These results suggest that agents which more effectively inhibit ADP-induced platelet activation should reduce 30-day stent thrombosis when applied to large patient populations," said lead investigator, Gregg W. Stone, MD. Dr. Stone is Director of Cardiovascular Research and Education at NewYork-Presbyterian Hospital/Columbia University Medical Center and Professor of Medicine, Division of Cardiology at Columbia University College of Physicians and Surgeons. Dr. Stone also serves as Co-Director, Medical Research & Education Division at the Cardiovascular Research Foundation.

"However, the modest sensitivity and specificity of platelet function testing, coupled with the low prevalence of events, implies that testing of platelet ADP antagonist responsiveness is unlikely to provide useful information to guide clinical decision-making in most individual patients for the prevention of stent thrombosis at 30 days," said Dr. Stone.

"The degree of platelet responsiveness to antiplatelet loading is useful to predict 30-day stent thrombosis in diabetic and non-diabetic patients, as well as those with ACS, but may have less clinical utility in patients with

stable coronary artery disease (CAD)," Dr. Stone said.

"There was a low stent thrombosis rate in patients with stable CAD, which coupled with the poor prognostic utility of platelet function testing in this setting, suggests that assessing DAPT response in patients without ACS undergoing PCI is unlikely to provide incremental clinical utility. The relationship between platelet responsiveness testing and the occurrence of late and very late stent thrombosis, in patients who have maintained and discontinued DAPT, will be assessed during the two-year clinical follow-up phase of the ADAPT-DES study."

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