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DOES PLATELET FUNCTION TESTING ADD SIGNIFICANT INCREMENTAL RISK STRATIFICATION TO UNSELECTED PATIENTS UNDERGOING DES IMPLANTATION? THE ADAPT-DES STUDY

i2 Oral Contributions
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Background: High on-treatment platelet reactivity (HPR) has been associated with an increased occurrence of post-procedural thrombotic events among patients undergoing coronary stent implantation.

Objectives and Methods: We sought to examine the extent of reclassification of patient risk using HPR in order to asses the subsequent occurrence of definite-probable stent thrombosis (ST) in the ADAPT-DES study. ADAPT-DES was an 8,575 patient prospective multicenter observational study of unselected patients undergoing drug-eluting stent implantation; routine platelet function testing was performed with the VerifyNow P2Y12 point-of-care assay following clopidogrel loading.

Results: A total of 39 definite/probable ST events occurred at 30 days (0.46%). Patients with ST had higher platelet reactivity units (PRU) compared to those without ST (mean 249.4 vs. 187.6, p=0.0001). For the PRU test, the area under the receiving operating characteristic curve for 30-day ST was 0.68, with an optimal cutpoint of 206 PRU. Using a previously described PRU cutpoint of >208, test characteristics in the ADAPT-DES population were as follows: sensitivity: 74.4%, specificity: 57.4%, positive predictive value: 0.8%, and negative predictive value: 99.8%. Using tertiles of ST rates to assign categories of risk among patients, the net reclassification index (NRI) was 28.7% for PRU>208 (p<0.001), indicating reclassification of almost 1/3 of patients, with the majority of reclassifications occurring among patients without events. However, because of overall low event rates and significant overlap between patients with and without ST, the integrated discrimination index (IDI), signifying the absolute level of reclassification among both patients with events and those with non-events, was low at 0.1% (p<0.001).

Conclusions: HPR is independently associated with 30-day ST among patients undergoing stent implantation. However, due to low overall event rates, the predictive accuracy of HPR for ST is modest. These data suggest a low overall clinical utility of HPR to predict the risk of 30-day ST among unselected patients undergoing PCI.