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CORONARY: FOCUS ON ANTITHROMBOTIC DRUGS

Impact of Aspirin and Clopidogrel Hyporesponsiveness in Patients Treated With Drug-Eluting Stents: 2-Year Results of a Prospective, Multicenter Registry Study 1607
Thomas D. Stuckey, Ajay J. Kirtane, Bruce R. Brodie, Bernhard Witzenbichler, Claire Litherland, Giora Weisz, Michael J. Rinaldi, Franz-Josef Neumann, D. Christopher Metzger, Timothy D. Henry, David A. Cox, Peter L. Duffy, Ernest L. Mazzaferri, Jr., Paul A. Gurbel, Roxana Mehran, Philippe Généreux, Ori Ben-Yehuda, Charles A. Simonton, Gregg W. Stone, for the ADAPT-DES Investigators

The authors sought to examine the independent associations between platelet reactivity to both aspirin and clopidogrel and subsequent outcomes following drug-eluting stent (DES) implantation. The ADAPT-DES (Assessment of Dual AntiPlatelet Therapy with Drug-Eluting Stents) study was a large-scale, prospective, multicenter registry of patients undergoing routine platelet function testing following successful percutaneous coronary intervention with DES. The primary study endpoint was definite or probable stent thrombosis. The present study confirms the strong relationship between high on-clopidogrel platelet reactivity and 2-year ischemic and bleeding outcomes after DES; however, the majority of stent-related events associated with high platelet reactivity occurred within the first year, and hyporesponsiveness to aspirin did not predict very late events.

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Risk of Early Adverse Events After Clopidogrel Discontinuation in Patients Undergoing Short-Term Dual Antiplatelet Therapy: An Individual Participant Data Analysis 1621
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Few data exist on the risk early adverse events soon after clopidogrel discontinuation after short-term dual antiplatelet therapy (DAPT) in patients undergoing percutaneous coronary intervention. The authors performed an individual participant data analysis and aggregate meta-analysis with major adverse cardiac and cerebrovascular events (MACCE) as primary endpoint. In the first 90 days after DAPT discontinuation, the risk of MACCE was not increased if aspirin and clopidogrel were administered for 3 or 6 months. However, there was an early increase in the risk of MACCE after DAPT discontinuation in trials with exposure to aspirin and thienopyridine for 12 months or more.

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Too Hot? Too Cold? When Is it "Just Right" to Stop Dual Antiplatelet Therapy After PCI With DES? 1631
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Safety and Efficacy of Polymer-Free Biolimus A9–Coated Versus Bare-Metal Stents in Orally Anticoagulated Patients: 2-Year Results of the LEADERS FREE Oral Anticoagulation Substudy 1633
Didier Carrié, Ian Menown, Keith Oldroyd, Samuel Copt, Suneel Talwar, Luc Maillard, Marie-Claude Morice, Lim Soo Teik, Irene Lang, Philip Urban

Biolimus A9 drug-coated stents (DCS) were compared with bare-metal stents (BMS) in 879 patients enrolled in the LEADERS FREE (A Randomized Clinical Evaluation of the BioFreedom™ Stent) trial and scheduled to continue oral anticoagulation after percutaneous coronary interventions. Dual antiplatelet therapy was limited to 1 month. At 2 years, the incidence of clinically driven target lesion revascularization, the primary safety endpoint, and major bleeding was 7.5% versus 11.2% ($p = 0.0514$), 14.4% versus 15.0% (p = NS), and 10.7% versus 12.9% (p = NS) in DCS and BMS recipients, respectively. In patients in need of long-term oral anticoagulation, DCS were more effective than BMS, though despite a short course of dual antiplatelet therapy, rates of major bleeding remained high.

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Comparison of Ticagrelor Versus Prasugrel for Inflammation, Vascular Function, and Circulating Endothelial Progenitor Cells in Diabetic Patients With Non-ST-Segment Elevation Acute Coronary Syndrome Requiring Coronary Stenting: A Prospective, Randomized, Crossover Trial 1646
Han Saem Jeong, Soon Jun Hong, Sang-A Cho, Jong-Ho Kim, Jae Young Cho, Seung Hun Lee, Hyung Joon Joo, Jae Hyoung Park, Cheol Woong Yu, Do-Sun Lim

This study compared adenosine-associated pleiotropic effects of the 2 $P2Y_{12}$ receptor antagonists on vascular function, systemic inflammation, and circulating endothelial progenitor cells. Ticagrelor meaningfully increased the adenosine level compared with prasugrel; furthermore, administration of ticagrelor significantly improved arterial endothelial function evaluated as brachial artery flow-mediated dilation. Compared with prasugrel, ticagrelor significantly decreased inflammatory cytokines and increased circulating endothelial progenitor cells, contributing to improved arterial endothelial function in diabetic non–ST-segment elevation acute coronary syndrome patients. Thus, data support that pleiotropic effects of ticagrelor beyond its potent antiplatelet effects can contribute to additional clinical benefits.

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