Prevalence and Impact of High Platelet Reactivity in Chronic Kidney Disease: Results from the ADAPT-DES Registry

Usman Baber1, Roxana Mehran2, Ajay J. Kirtane3, Paul A. Garbel4, Georgios Christodoulou1, Bernhard Wittenbacher3, Giora Weiss5, D. Christopher Metzger1, Timothy D. Henry1, David Cox6, Peter L. Duffy7, Ernest L. Mazzaferrari8, Ke X. Helen Paris8, Bruce R. Brodie1, Thomas Stuckey1, Gregg Stone9

1Mount Sinai School of Medicine, New York, NY, 2Mount Sinai Hospital, New York, NY, 3Columbia University Irving Cardiovascular Research Foundation, New York, NY, 4Sinai Center for Thrombosis Research, Baltimore, MD, 5Washoug University Hospital, Mineola, NY, 6Charité Campus Benjamin Franklin, Berlin, Germany, 7Columbia University, New York, United States, 8Wellmont CVA Heart Institute, Kingsport, TN, 9Minneapolis Heart Institute Foundation at Abbott Northwestern Hospital, Minneapolis, United States, 10Lehigh Valley Health Network, Allentown, PA, 11Pinheatre Cardiology, Pinehurst, NC, 12Ohio State University, Dublin, OH, 13Cardiovascular Research Foundation, New York, NY, 14Cardiovascular Research Foundation, New York, New York, 15Lebauer CV Research Foundation, Greensboro, NC, 16Lebauer Cardiovascular Research Foundation, Greensboro, NC, 17Columbia University Medical Center and the Cardiovascular Research Foundation, New York, United States

Background: Chronic Kidney Disease (CKD) is associated with an increased risk for stent thrombosis and adverse events following percutaneous coronary intervention (PCI). High platelet reactivity (HPR) is also an independent correlate of thrombotic events post PCI. Although CKD modulates platelet function, the impact of CKD on HPR remains controversial, and whether or not HPR confers a differential risk for MACE between CKD and non-CKD patients is unknown.

Methods: We performed a post-hoc analysis of the ADAPT-DES registry, which included 8,583 patients (8,449 of whom had baseline serum creatinine measures).

We performed a post-hoc analysis of the ADAPT-DES registry, which included 8,583 patients (8,449 of whom had baseline serum creatinine measures). We performed a post-hoc analysis of the ADAPT-DES registry, which included 8,583 patients (8,449 of whom had baseline serum creatinine measures). We performed a post-hoc analysis of the ADAPT-DES registry, which included 8,583 patients (8,449 of whom had baseline serum creatinine measures).

Results: Patients with CKD (n=1,395; 16.5%) were older and more often female and diabetic, and had a lower ejection fraction compared to their non-CKD counterparts (n=7,054). Unadjusted HPR prevalence was higher among those with vs. without CKD (48.9% vs. 41.5%, P<0.001). However, after multivariable adjustment this association was attenuated and no longer significant. While 1-year MACE rates were higher among those with vs. without CKD (6.6% vs. 3.6%, P<0.001), the adverse and incremental impact of HPR on MACE was uniform across CKD strata (pint ¼ NS for all endpoints, Table 1).

Conclusions: While HPR is more common among those with CKD, this association appears largely attributable to confounding risk factors that are more prevalent in these patients. The incremental impact of HPR on MACE is similar among those with and without CKD.

Table 1. Adjudicated Events to 1-Year

<table>
<thead>
<tr>
<th>Event</th>
<th>n (%)</th>
<th>HR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stent thrombosis (definite/ probable)</td>
<td>1.8% (12)</td>
<td>1.38 (1.03, 1.87)</td>
</tr>
<tr>
<td>Cardiac death or MI</td>
<td>7.3% (48)</td>
<td>1.31 (1.08, 1.59)</td>
</tr>
<tr>
<td>MACE*</td>
<td>10.9% (71)</td>
<td>1.71 (1.02, 2.88)</td>
</tr>
<tr>
<td>MACE2**</td>
<td>7.3% (48)</td>
<td>1.31 (1.08, 1.59)</td>
</tr>
</tbody>
</table>

*MACE = cardiac death, MI, or clinically driven TLR; **MACE2 = cardiac death, MI, or definite/probable ST

Impact Of Early Versus Late Clopidogrel Discontinuation On Stent Thrombosis Following Percutaneous Coronary Intervention With First- And Second-Generation Drug-Eluting Stents

Joshua P. Loh1, Salam Bader1, Israel Barbash3, Fang Chen4, Kenneth Kenf1, Hirokuni Kitabata5, Marco A. Magalhaes4, Sai ar Matha4, Al Fazir Omar4, Hideaki Ota6, Lakshmana Pendyala2, Augusto Pichard7, Lowell F. Satler2, William O. Suddath8, Rebecca Torgason9, Ron Waksman10

1Medstar Washington Hospital Center, Washington, DC, 2Washington Hospital Center, Washington, DC, 3Medstar Washington Hospital Center, Washington, DC, 4Medstar Heart Institute, Washington, District Of Columbia, 5Medstar Washington Hospital Center, Washington, DC, 6Medstar Washington Hospital Center, Washington, DC, 7Washington Hospital Center, Washington, United States, 8Washington hospital center, Washington, DC, 9Washington Hospital Center, Washington, DC, 10Medstar Health Research Institute, Washington, DC

Background: Premature discontinuation of antiplatelet therapy after percutaneous coronary intervention is known to predict stent thrombosis (ST). We aimed to compare the impact of early versus late antiplatelet therapy discontinuation on ST in patients receiving first- and second-generation drug-eluting stents (DES).

Methods: A total of 6587 patients undergoing PCI with DES were analyzed, of which 5580 received 1st-generation DES (Cypher or Taxus) and 207 received 2nd-generation DES (Xience or Promus). Patients were categorized into timing of clopidogrel discontinuation within 1 year (never, <3 months, 3-12 months). The 1-year ARC-defined definite or probable ST was analyzed.

Results: In patients with 1st-generation DES, 536 (11.7%) had clopidogrel discontinued, 173 (3.8%) within first 3 months and 363 (7.9%) at 3-12 months. Cumulative 1-year ST rates were 1.0%, 13.6%, 3.0% (p<0.001) for never, <3 months, 3-12 months discontinued, respectively. (Figure A) In patients with 2nd-generation DES, 214 (11.9%) had clopidogrel discontinued, 94 (4.7%) within first 3 months and 120 (5.9%) at 3-12 months. Cumulative 1-year ST rates were 0.1%, 5.4%, 0% (p<0.001) for never, <3 months, 3-12 months discontinued, respectively. (Figure B)

Conclusions: Early clopidogrel discontinuation significantly increases the risk of ST after percutaneous coronary intervention in both 1st- and 2nd-generation DES. The impact of clopidogrel discontinuation on ST appears to attenuate with the use of 2nd-generation DES.

6-month versus 12-month dual antiplatelet therapy after implantation of 2nd-generation drug-eluting stents with Bioiusmus-eluting Versus Zotarolimus-eluting stent: Prospective, Randomized, Multicenter Trial

Byoung Kwon Lee1, Hong Bum-Kee1, Young Won Yoon2, Pil-Ki Min2, Hyuck Moon Kwon1, Byoung Keuk Kim1, Myeong-Ki Hong2, Yang soo Jang3

1Gangnam Severance Hospital,Yonsei University, Seoul, Korea, Republic of, 2Gangnam Severance Hospital, Yonsei University, Seoul, Korea, Republic of, 3Gangnam Severance Hospital, Yonsei University College of Medicine, Seoul, Korea, Republic of, 4Division of Cardiology, Cardiovascular Center, Yonsei University College of Medicine, Seoul, Korea, Republic of

Background: While newer drug eluting stent (DES) promote more favorable vascular healing, the optimal duration of dual antiplatelet therapy (DAPT) after implantation with 2nd generation drug-eluting coronary stents remains undetermined. We aimed to test whether 6-month DAPT would be non-inferior clinical and angiographic outcome to 12-month DAPT after implantation of Zotarolimus-eluting stent (ZES) and bioiusmus-eluting stent (BES).

Methods: This is a prospective, double-randomized, open-label, multicenter trial to compare clinical events between 6-month DAPT and 12-month DAPT (in a 1:1 ratio), and to demonstrate the non-inferiority of BES compared with ZES stents (in 1:1 ratio), angiographically. Currently, 1055 patients were randomly assigned. The primary end point was a major adverse cardiac events (MACE) at 12 months. Optical coherence tomography (OCT) at 6 month was performed in 30 patients of each group. The primary endpoint was MACE, secondary end points are target lesion failure, in-segment LL at 12 months, and neointimal hyperplasia (NIH) by OCT at 6 month.