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Quality of Care and Outcomes Assessment

THE IMPACT OF WORSENING RENAL DYSFUNCTION ON THE COMPARATIVE EFFICACY OF BIVALIRUDIN AND PLATELET GLYCOPROTEIN IIBIIIA INHIBITORS: INSIGHTS FROM BLUE CROSS BLUE SHIELD OF MICHIGAN CARDIOVASCULAR CONSORTIUM (BMC2)

Moderated Poster Contributions
Poster Sessions, Expo North
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Session Title: Surprises and Controversies in Outcomes Research
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Objective: To evaluate the impact of worsening renal function on the comparative bleeding risk associated with use of bivalirudin versus GP IIbIIIa inhibitors (GPI) in patients undergoing percutaneous coronary intervention (PCI).

Background: Use of bivalirudin has been associated with a reduction in the incidence of bleeding in patients undergoing PCI. Patients with chronic kidney disease (CKD), a known predictor of post-PCI bleeding, are underrepresented in clinical trials.

Methods: We evaluated the outcome of 64,052 patients who underwent PCI from 2008-2009 at 30 hospitals in Michigan who were treated with bivalirudin (28,378) or with heparin and GP IIbIIIa inhibitors (35,674). Propensity matched analysis adjusted for the non-randomized use of the two strategies.

Results: Patients treated with bivalirudin were older, had a lower GFR and more comorbidities. Use of bivalirudin was associated with fewer transfusions (2.7% vs. 4%, p <0.0001), GI bleeds (0.5% vs. 1.2%, p <0.0001) and vascular complications (1.0% vs. 2.4%, p<0.0001), with no difference in survival. Bleeding complications were more common with worsening renal function, but use of bivalirudin was associated with less bleeding across the continuum of renal dysfunction.

Conclusion: The risk of bleeding after PCI rises with worsening CKD. Bivalirudin was associated with a dramatically reduced risk of bleeding across all categories of renal dysfunction.

Figure 1: Odds of Bleeding Complications in Patients Treated with Bivalirudin vs. GPI by CKD Stage