Combined and independent impact of diabetes mellitus and chronic kidney disease on residual platelet reactivity.

Patients with both chronic kidney disease (CKD) and diabetes mellitus (DM) are at increased risk for thrombotic events compared to those with one abnormality alone. Whether this can be attributed to changes in platelet reactivity among those with both CKD and DM is unknown. We prospectively studied 438 clopidogrel-naïve patients undergoing percutaneous coronary intervention (PCI). Platelet function tests were performed 4-6 hours after loading with 600 mg of clopidogrel. Platelet reactivity was assessed using the VerifyNow system and expressed as P2Y12 reaction units (PRU). High residual platelet reactivity (HRPR) was defined as PRU > 230. Patients were categorised into four groups by the presence or absence of CKD and DM. Among those without CKD or DM (n=166), DM alone (n=150), CKD alone (n=60) and both CKD and DM (n=62) the mean PRU levels were 201.6 ± 96.3, 220.5 ± 101.1, 254.9 ± 106.7 and 275.0 ± 94.5, respectively (p<0.001). Analogously, the prevalence of HRPR was 42.3%, 50.7%, 63.3% and 75.8%, respectively (p< 0.001). Associations between either CKD or DM alone and HRPR were attenuated after multivariable adjustment while the odds for HRPR associated with both CKD and DM remained significant (OR [95% CI]: 2.61 [1.16 - 5.86]). In conclusion, the presence of both CKD and DM confers a synergistic impact on residual...
platelet reactivity when compared to either condition alone. Whether more potent platelet inhibitors may improve outcomes among patients with both abnormalities warrants investigation.

DOI
Alternate Journal
PubMed ID
10.1160/TH13-01-0004
Thromb. Haemost.
23677380