Abstract: P6405

Potential for drug-drug interaction between vonoprazan and prasugrel on antiplatelet effect assessed by VerifyNow P2Y12 assay in patients with coronary artery disease

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Background: Vonoprazan is a potassium-competitive acid blocker increasingly used in Japan to prevent gastrointestinal bleeding in patients under dual antiplatelet therapy (DAPT) after coronary stents implantation. Since cytochrome P450 (CYP) 3A4 is involved in the primary metabolism of vonoprazan and prasugrel, there is a possibility that CYP-mediated drug-drug interaction between them can attenuate the antiplatelet function of prasugrel.

Purpose: The aim of this study was to investigate whether antiplatelet effect of prasugrel could be attenuated upon coadministration with vonoprazan compared to conventional proton pump inhibitors (PPIs).

Method: We evaluated 72 patients (57 males, 67 ± 11 years) with coronary artery disease who were taking either vonoprazan (n = 35) or PPIs (n = 37) in combination with DAPT (aspirin and prasugrel) after drug-eluting stents implantation. PPIs included 21 esomeprazole, 8 lansoprazole, and 8 rabeprazole. Antiplatelet effects of prasugrel were assessed using VerifyNow P2Y12 assay. Primary measurements were P2Y12 reaction units (PRU) and P2Y12 percent inhibition. High on-treatment platelet reactivity (HPR) on prasugrel was defined as PRU > 208. Administration period of vonoprazan or PPIs in combination with DAPT = 7 days was defined as early administration period.

Results: Median administration period of vonoprazan or PPIs in combination with DAPT was 127 days. There were no significant differences in baseline clinical characteristics between patients with vonoprazan and PPIs. In the analysis for all subjects, patients with vonoprazan showed similar PRU (166 ± 50 vs. 167 ± 64, p = 0.93) and percent inhibition (36 ± 18 vs. 38 ± 23, p = 0.66) compared to those with PPIs. No significant differences were observed in the prevalence of HPR between patients with vonoprazan and PPIs (17 vs. 30 %, p = 0.27).

In the analysis for patients in early administration period [vonoprazan (n = 14) vs. PPIs (n = 10)], there were no significant differences in PRU (166 ± 47 vs. 186 ± 82, p = 0.45), percent inhibition (33 ± 17 vs. 30 ± 26, p = 0.73), and prevalence of HPR (14 vs. 50 %, p = 0.085) between patients with vonoprazan and PPIs. In addition, the analysis for patients over early administration period [vonoprazan (n = 21) vs. PPIs (n = 27)] showed that PRU (166 ± 55 vs. 160 ±57, p = 0.73), percent inhibition (37 ± 19 vs. 41 ± 21, p = 0.57), and prevalence of HPR (19 vs. 22 %, p = 1.00) were comparable between patients with vonoprazan and PPIs.

Conclusion: Compared to PPIs, vonoprazan did not exhibit significant inhibitory effects on the antiplatelet activity of prasugrel assessed by VerifyNow assay. These findings suggest that there are possibly no clinically harmful drug-drug interactions between vonoprazan and prasugrel.