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The interaction between clopidogrel and proton pump inhibitors in Japanese patients

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Clopidogrel is an antiplatelet medicine that is used to prevent problems with blood clots such as heart attacks or strokes. Clopidogrel is a pro-drug, which needs to be activated through the action of cytochrome P450 (CYP) 1A2, 2B6, 2C9, 2C19, and 3A. Proton pump inhibitors (PPI) are frequently used to prevent upper gastrointestinal bleeding. However, previous studies have reported that concomitant use of clopidogrel and PPI is associated with an increase in the number of major adverse cardiovascular events (MACE) and a decrease in the antiplatelet effect of clopidogrel, which is attributable to the drug interaction involving cytochrome CYP 2C19. CYP2C19 polymorphism has been suggested as the cause of clopidogrel resistance and affects clinical outcomes. In fact, several studies have shown the possibility that PPI, especially omeprazole, might diminish the antiplatelet effects of clopidogrel through inhibition of CYP2C19. On the other hand, there are also conflicting data that the interaction between clopidogrel and PPI had no effect on clinical outcome. Whether a 'clinically meaningful' interaction exists between PPIs and dual antiplatelet therapy is uncertain. The frequency of CYP2C19 poor metabolizer in Japan is about 20%, which is higher than that in Western countries. Therefore, we hypothesized that Japanese patients receiving clopidogrel and PPI might be at increased risk of MACE. The objectives of this study are to investigate whether rabeprazole reduces the risk of GI bleeding, and increases the incidence of MACE during dual-antiplatelet therapy after drug-eluting stent implantation in Japanese patients.

Biography

Takeo Yasu graduated from School of Pharmacy, Showa University in 2002. He did his MSc at department of Biochemical Toxicology, School of Pharmacy, Showa University in 2004. Presently working at Department of Pharmacy, Shonan Kamakura General Hospital, Japan.