Body mass index and efficacy and safety of ticagrelor versus prasugrel in patients with acute coronary syndromes

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Background: The efficacy and safety of ticagrelor versus prasugrel in patients with acute coronary syndromes (ACS) according to body mass index (BMI) remain unknown.

Purpose: To assess the efficacy and safety of ticagrelor versus prasugrel in patients with ACS according to BMI.

Methods: This post-hoc analysis of the ISAR-REACT 5 trial included 3987 patients with BMI data available. BMI was grouped in 3 categories: low (BMI<25 kg/m^2, n=1084), intermediate (BMI ≥25 to <30 kg/m^2, n=1890) and high (BMI≥30 kg/m^2, n=1013). The primary endpoint was the 12-month incidence of all-cause death, myocardial infarction, or stroke. The secondary endpoint was the 12-month incidence of Bleeding Academic Research Consortium (BARC) type 3 to 5 bleeding.

Results: There was no significant treatment arm-by-BMI interaction regarding the primary endpoint (Pint=0.578). However, the primary endpoint occurred in 63 patients assigned to ticagrelor and 39 patients assigned to prasugrel in the low BMI group (11.7% vs. 7.5%; hazard ratio [HR]=1.62; 95% confidence interval [CI], 1.09–2.42; P=0.018), 78 patients assigned to ticagrelor and 58 patients assigned to prasugrel in the intermediate BMI group (8.3% vs. 6.2%; HR=1.36 [0.97–1.91]; P=0.076), and 43 patients assigned to ticagrelor and 37 patients assigned to prasugrel in the high BMI group (8.6% vs. 7.3%; HR=1.18 [0.76–1.84]; P=0.451). BARC type 3 to 5 bleeding events did not differ between ticagrelor and prasugrel in patients with low (6.5% vs. 6.6%), intermediate (5.6% vs. 5.0%), or high (4.4% vs. 2.8%) BMI.

Conclusions: BMI of patients with ACS did not impact significantly on the treatment effect of ticagrelor vs. prasugrel in terms of both efficacy and safety.