

# Real-world data of prasugrel versus ticagrelor in acute myocardial infarction – experience from Dubrava University Hospital

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**KEYWORDS:** ticagrelor, prasugrel, acute myocardial infarction.

**CITATION:** Cardiol Croat. 2022;17(9-10):270. | <https://doi.org/10.15836/ccar2022.270>

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**Background:** Dual antiplatelet therapy (DAPT) is a cornerstone of the treatment of acute coronary syndromes. In Rapid Early Action for Coronary Treatment 5 (ISAR-REACT 5) trial, prasugrel was superior to ticagrelor regarding the primary outcome, a composite of all-cause death, myocardial infarction (MI), or stroke, at 12 months. This superiority was primarily driven by a reduction in the number of MIs in the prasugrel group. Limited data are available concerning differences in clinical outcomes for real-life patients treated with ticagrelor versus prasugrel after percutaneous coronary intervention (PCI). One observational study indicated that prasugrel was safer and more effective than ticagrelor in patients with non-ST-elevation myocardial infarction (NSTEMI), with a reduction of reinfarction and major bleeding events at 12-month follow-up<sup>1</sup>. Our objective was to determine and compare the efficacy and safety of ticagrelor and prasugrel in a real-world population in our center.

**Patients and Methods:** This was an observational study conducted in Dubrava University Hospital. In total, 1380 patients (1176 ticagrelor, 204 prasugrel) who were hospitalized for acute MI from January 2017 to January 2020. There were 837 patients with acute myocardial infarction with ST elevation (STEMI) in ticagrelor group and 62 patients in prasugrel group. There were 329 patients with NSTEMI in ticagrelor group and 140 patients in prasugrel group. SYNTAX score was significantly higher in prasugrel group (13 vs 11). Median age of patients in prasugrel group was 64, and 62 in the ticagrelor group.

**Results:** After 12 months of follow up, 5.8% patients in the ticagrelor experienced major adverse cardiac event (MACE) (reinfarction, death, stroke or bleeding) vs 1.5% of patients in the prasugrel group irrespective of MI type (STEMI or NSTEMI) (p=0.003).

**Conclusions:** Comparison of these drugs suggested that prasugrel is safer and more efficacious than ticagrelor in combination with aspirin after both STEMI and NSTEMI. The nonrandomized design of the present research means further studies are required to support these findings.

RECEIVED:  
November 3, 2022

ACCEPTED:  
November 10, 2022



## LITERATURE

1. Coughlan JJ, Aytekin A, Lahu S, Ndrepepa G, Menichelli M, Mayer K, et al. Ticagrelor or Prasugrel for Patients With Acute Coronary Syndrome Treated With Percutaneous Coronary Intervention: A Prespecified Subgroup Analysis of a Randomized Clinical Trial. *JAMA Cardiol.* 2021 Oct 1;6(10):1121-1129. <https://doi.org/10.1001/jamacardio.2021.2228>