Ticagrelor or prasugrel in patients with acute coronary syndrome in relation to glomerular filtration rate

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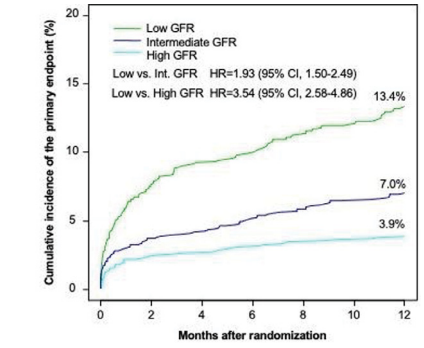
Objectives: The aim of this study was to assess the safety and efficacy of ticagrelor versus prasugrel for patients with acute coronary syndrome (ACS) according to their glomerular filtration rate (GFR).

Background: The outcomes of ticagrelor versus prasugrel in patients with ACS according to GFR have not been defined.

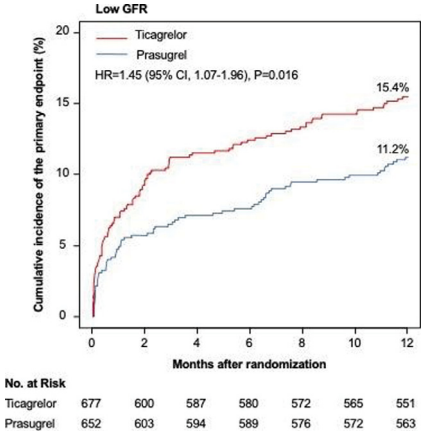
Methods: Patients (n=3985) with GFR available were categorized in three groups according to the tertiles of GFR. The primary endpoint was a composite of all-cause death, myocardial infarction and stroke at 1 year.

Results: The primary endpoint occurred significantly more often in patients with low GFR compared to high GFR as well as in patients with low GFR compared to intermediate GFR (picture 1). Patients in the lowest GFR group had significantly higher ischemic and bleeding risks than patients in the intermediate (hazard ratio [HR] 1.93 and 1.68) or high GFR groups (HR 3.52 and 2.96). In the group with low GFR, the primary endpoint occurred in 103 of 677 ticagrelor patients (15.4%) and in 72 of 652 prasugrel patients (11.2%; (HR=1.45, [1.07–1.96], p=.016, picture 2). In addition, each single component of the primary endpoint and stent thrombosis were numerically lower with prasugrel compared with ticagrelor. Occurrence of myocardial infarction was 3.7% with prasugrel compared to 6.6% with ticagrelor (p=0.019). BARC 3–5 bleeding events were similar with ticagrelor and prasugrel (8.8% versus 7.1%, p=0.278). In the intermediate and high GFR group the primary endpoint and bleeding events were similar between prasugrel and ticagrelor.

Conclusions: The incidence of a composite endpoint (all-cause death, myocardial infarction or stroke) occurred less frequently in patients who received prasugrel compared to patients who received ticagrelor in the low GFR population, whereas rate of bleeding events was similar.



Primary endpoint according to GFR



Low GFR: Prasugrel versus Ticagrelor