Incidence and pattern of repeat coronary revascularizations in patients with acute coronary syndromes treated with ticagrelor or prasugrel

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Background: The ISAR-REACT 5 randomized trial compared the efficacy and safety of ticagrelor and prasugrel in patients with acute coronary syndromes (ACS) managed invasively. Data are missing with regard to the effect of these antiplatelet agents on the repeat revascularization procedures.

Purpose: We sought to investigate the impact of ticagrelor and prasugrel on the incidence and pattern of repeat coronary revascularizations in patients with ACS undergoing percutaneous coronary intervention (PCI).

Methods: This post-hoc analysis of the ISAR-REACT 5 trial included all ACS patients who underwent PCI. Patients were divided into two groups as per assigned antiplatelet treatment. The primary outcome for this analysis was the incidence of repeat coronary revascularization (percutaneous or surgical) up to 12-month follow-up. Secondary outcomes were target vessel revascularization (TVR) and non-target vessel revascularization (NTVR). We also studied whether repeat revascularization procedures were urgent in nature.

Results: Among 3,377 ACS patients, 1,676 were assigned to ticagrelor and 1,701 to prasugrel group before receiving PCI. Compared with prasugrel, the incidence of repeat coronary revascularization at 12 months was significantly higher in patients treated with ticagrelor (hazard ratio [HR]=1.14; 95% confidence interval [CI] 1.01-1.29), mostly attributable to significantly more NTVR (HR=1.15 [1.01-1.32]) in this latter group. There were numerically more urgent repeat revascularizations in patients receiving ticagrelor compared with prasugrel (HR=1.32 [1.00-1.75]), mostly due to urgent NTVR (HR=1.62 [1.09-2.41]). The risk of TVR was not significantly different between treatment groups (HR=1.04 [0.76-1.44]).

Conclusions: In patients with ACS treated with PCI, ticagrelor is associated with significantly more repeat coronary revascularizations compared to prasugrel after 12 months, predominantly in remote coronary vessels.
A

Cumulative incidence of repeat revascularization (%)

No. at Risk

<table>
<thead>
<tr>
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<th>Months after randomization</th>
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<tbody>
<tr>
<td>Ticagrelor</td>
<td>1676 1250 1172 1133 1086 1087 1044</td>
</tr>
<tr>
<td>Prasugrel</td>
<td>1701 1319 1299 1217 1149 1130 1103</td>
</tr>
</tbody>
</table>

HR 1.14 (95% CI, 1.01-1.29)
p = 0.034

32.5%

B

Cumulative incidence of repeat revascularization (%)

No. at Risk

<table>
<thead>
<tr>
<th></th>
<th>Months after randomization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ticagrelor</td>
<td>1676 1544 1524 1501 1486 1477 1400</td>
</tr>
<tr>
<td>Prasugrel</td>
<td>1701 1587 1574 1558 1533 1523 1502</td>
</tr>
</tbody>
</table>

HR 1.32 (95% CI, 1.00-1.75)
p = 0.051

8.6%

5.2%