Effects of evolocumab in patients with prior percutaneous coronary intervention: An analysis from the FOURIER trial

Remo H.M. Furtado\textsuperscript{1,2}, Antônio Aurélio Fagundes Jr., Kazuma Oyama, Thomas A. Zelniker, Minao Tang, Julia F. Kuder, Sabina A. Murphy, Andrew Hamer, Huei Wang, Anthony C. Keech, Terje R. Pedersen, Robert P. Giugliano, Marc S. Sabatine, Brian A. Bergmark, on behalf of FOURIER Steering Committee and Investigators

\textsuperscript{1} TIMI Study Group, Brigham and Women’s Hospital, Boston, MA;
\textsuperscript{2} Academic Research Organization, Hospital Israelita Albert Einstein, São Paulo, Brazil;
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Background

- Patients with prior percutaneous coronary intervention (PCI) comprise an important subgroup for secondary prevention.

- Despite the widespread use of later-generation drug eluting stents (DES), these patients remain at heightened risk of coronary events, including repeat coronary revascularization and recurrent myocardial infarction.
Methods

- 27,564 pts with established atherosclerotic CV disease on statin therapy randomized to evolocumab vs placebo
- Patients with prior PCI were pre-specified subgroup
- Endpoint: Coronary death, MI or coronary revascularization
- Detailed review of coronary revasc reports performed blinded to treatment arm
- Comparison of outcomes in PBO group with versus without prior PCI using Cox model, adjusted for baseline differences
- Comparison of EVO vs PBO, stratified by prior PCI, assessed by Cox model and analysis of treatment-by-subgroup interaction
### Baseline Characteristics

<table>
<thead>
<tr>
<th>Characteristics*</th>
<th>Prior PCI (N=17,073)</th>
<th>No prior PCI (N=10,455)</th>
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</thead>
<tbody>
<tr>
<td>Age (yrs), median</td>
<td>62</td>
<td>64</td>
</tr>
<tr>
<td>Female sex, (%)</td>
<td>21</td>
<td>31</td>
</tr>
<tr>
<td>White Race, (%)</td>
<td>87</td>
<td>83</td>
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<tr>
<td>Hypertension, (%)</td>
<td>78</td>
<td>83</td>
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<tr>
<td>Diabetes, (%)</td>
<td>34</td>
<td>41</td>
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<tr>
<td>Smoker, (%)</td>
<td>28</td>
<td>28</td>
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<tr>
<td>Prior MI, (%)</td>
<td>96</td>
<td>56</td>
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<tr>
<td>Prior stroke, (%)</td>
<td>8</td>
<td>38</td>
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<tr>
<td>PAD, (%)</td>
<td>9</td>
<td>20</td>
</tr>
<tr>
<td>eGFR (ml/min/1.73 m²), median</td>
<td>76</td>
<td>74</td>
</tr>
<tr>
<td>LDL-C (mg/dL), median</td>
<td>92</td>
<td>92</td>
</tr>
</tbody>
</table>

*All p-values < 0.001 for between group differences, except smoker (p=0.53) and LDL-C (p=0.039)
Major Coronary Events in the placebo arm

Adjusted for age, weight, eGFR, baseline LDL-C, sex, race, region, history of residual CAD > 2 vessels, history of MI, history of stroke, PAD, hypertension, diabetes and prior CABG.
Effect of Evolocumab on Major Coronary Events

Prior PCI
HR 0.82 (0.75-0.90)
P < 0.0001
ARR = 2.8%

No prior PCI
HR 0.88 (0.75-1.04)
ARR = 0.3%

P-int for ARR (Prior PCI vs No prior PCI) = 0.023
Coronary revascularizations in patients with prior PCI

- Any revascularization:
  - Placebo: 9.3%
  - Evolocumab: 7.2%
  - HR: 0.76 (0.69-0.85)

- PCI:
  - Placebo: 8.2%
  - Evolocumab: 6.3%
  - HR: 0.77 (0.69-0.86)

- PCI for de novo lesions:
  - Placebo: 5.1%
  - Evolocumab: 3.9%
  - HR: 0.76 (0.66-0.88)

- PCI for not de novo lesions:
  - Placebo: 3.0%
  - Evolocumab: 2.4%
  - HR: 0.77 (0.64-0.92)

- Revascularization for ISR:
  - Placebo: 2.5%
  - Evolocumab: 2.1%
  - HR: 0.85 (0.69-1.03)

*ISR or bypass graft PCI

N = 796, N = 611
N = 701, N = 539
N = 433, N = 333
N = 257, N = 200
N = 213, N = 180
Limitations

- Detailed coronary anatomical information was not available at baseline.

- Coronary angiograms films not available for review; event types determined by review of written reports.
Patients with prior PCI are at heightened risk for recurrent coronary events

Evolocumab reduces the risk of major coronary events when added to statin therapy in patients with ASCVD, with a higher absolute risk reduction in patients with a prior history of PCI

Evolocumab consistently reduces the risk for revasc for de novo lesions, not de novo lesions, and ISR