



Reduction with Evolocumab in Complex Coronary Revascularization: Insights from the FOURIER Trial

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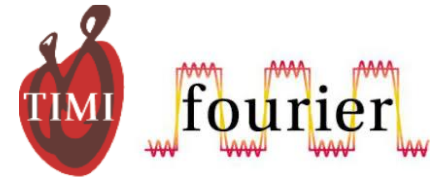
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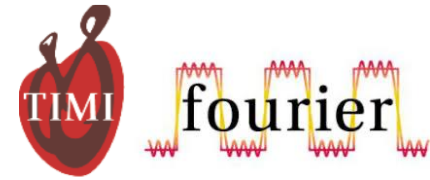
Introduction



PCSK9 inhibitors induce plaque regression and reduce the risk of coronary revascularization overall. The objective of this analysis was to investigate the coronary anatomical complexity at the time of revascularization and assess the effect of evolocumab on the risk of complex coronary revascularization procedures.



Methods



- FOURIER was a randomized trial of the PCSK9 inhibitor evolocumab vs. placebo in 27,564 patients with stable atherosclerosis on statin therapy followed for a median of 2.2 years.
- Clinical documentation of revascularization events was blindly reviewed to assess coronary anatomy and procedural characteristics.
- **Complex revascularization** was the composite of:
 - **CABG**, or
 - **Complex PCI** (GLOBAL LEADERS definition)
 - At least one of:
 - (1) Multivessel PCI
 - (2) ≥ 3 stents implanted
 - (3) ≥ 3 lesions treated
 - (4) bifurcation PCI with ≥ 2 stents
 - (5) total stent length >60 mm



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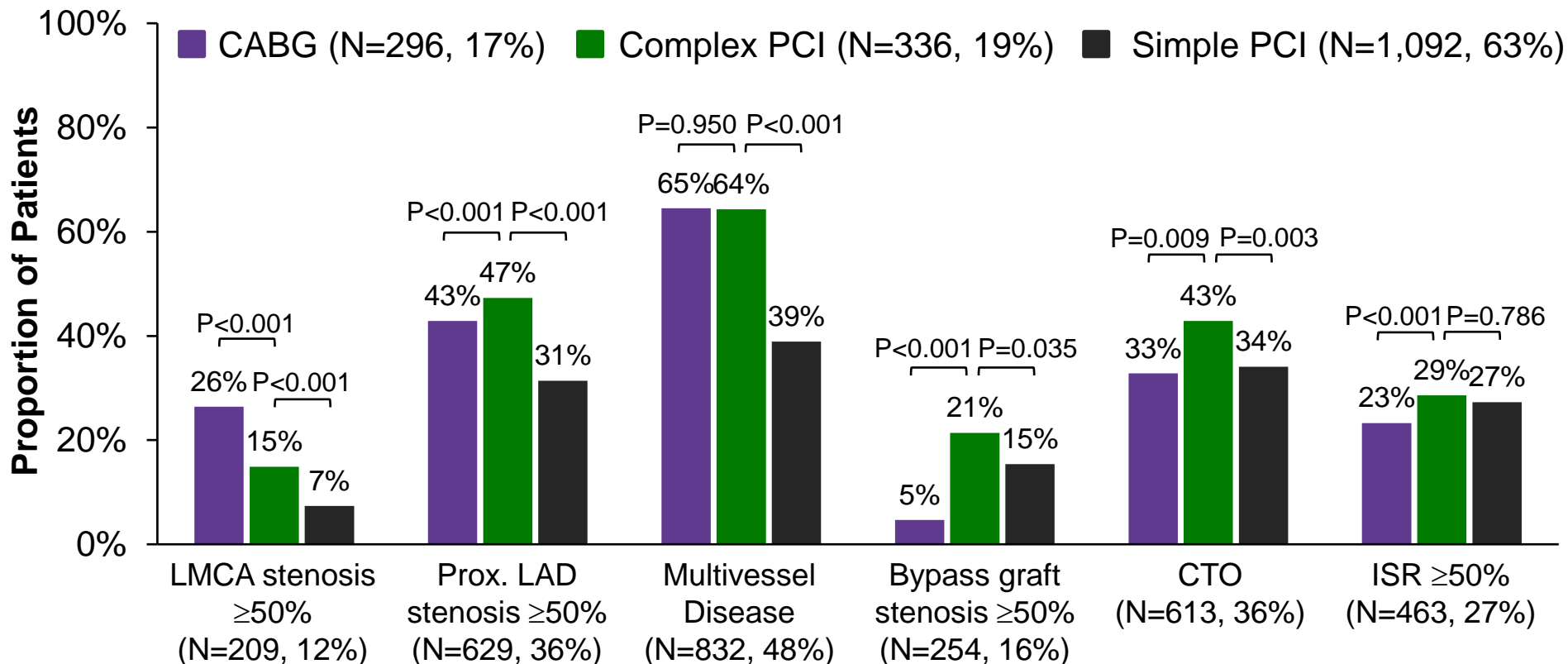
Baseline Characteristics



	Any complex revascularization (N=632)	Simple PCI only (N=1,092)	No revascularization (N=25,840)	P for trend (Any complex revasc vs. simple PCI vs. no revasc)
Age, years	62	61	63	0.23
Female, %	18	20	25	<0.001
History of MI, %	88	92	81	<0.001
History of nonhemorrhagic stroke, %	13	13	20	<0.001
History of PAD, %	17	14	13	0.007
Hypertension, %	82	82	80	0.092
DM, %	43	38	36	<0.001
History of PCI, %	76	85	61	<0.001
History of CABG, %	20	25	19	0.004
LDL-C, mg/dL	95	94	92	<0.001



Angiographic Characteristics by Procedure Type





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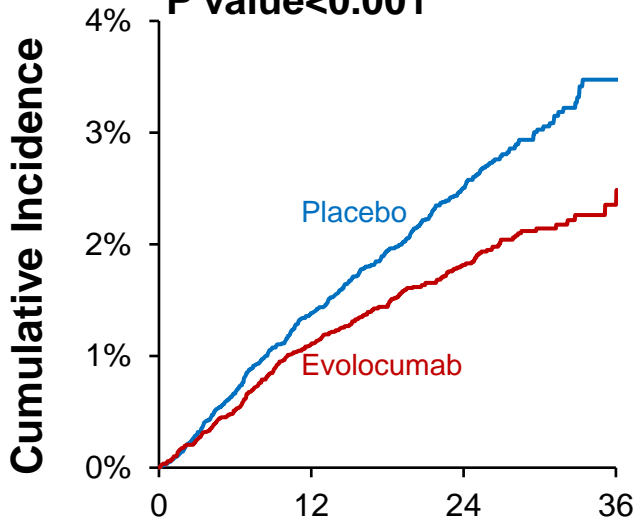
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Effect of Evolocumab on Complex Revascularization



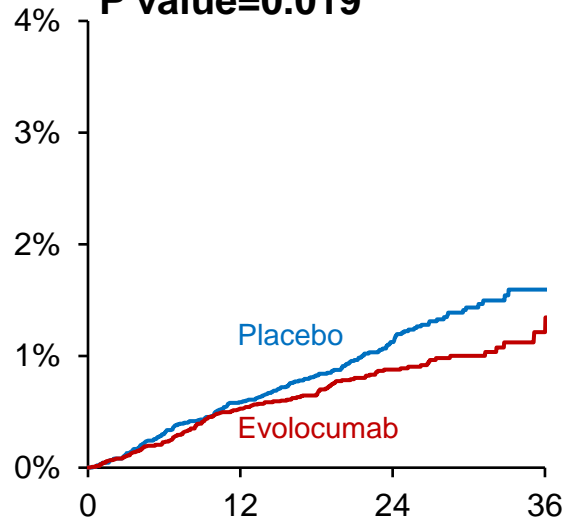
Complex revascularization

HR 0.71 (95% CI 0.61-0.84)
P value < 0.001



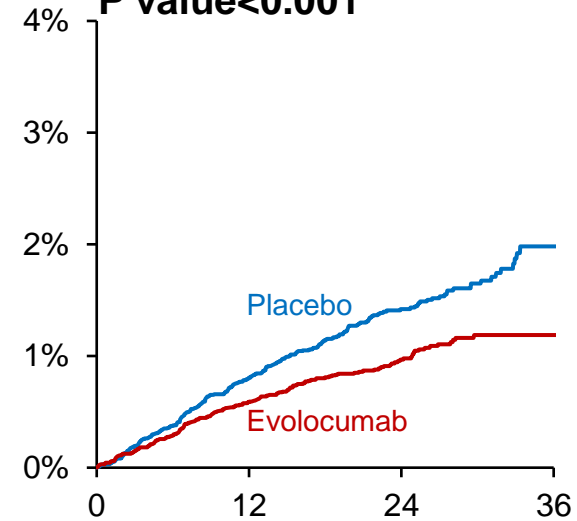
CABG

HR 0.76 (95% CI 0.60-0.96)
P value = 0.019



Complex PCI

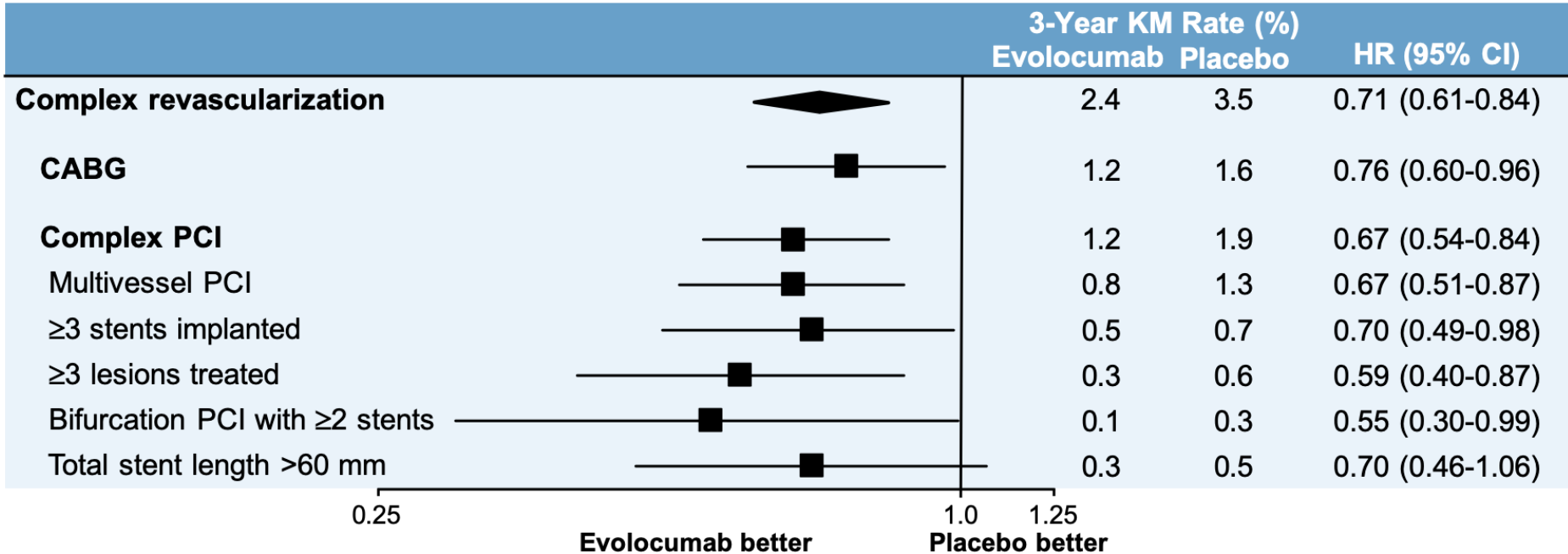
HR 0.67 (95% CI 0.54-0.84)
P value < 0.001



Time Since Randomization (Months)



Effect of Evolocumab on Complex Revascularization





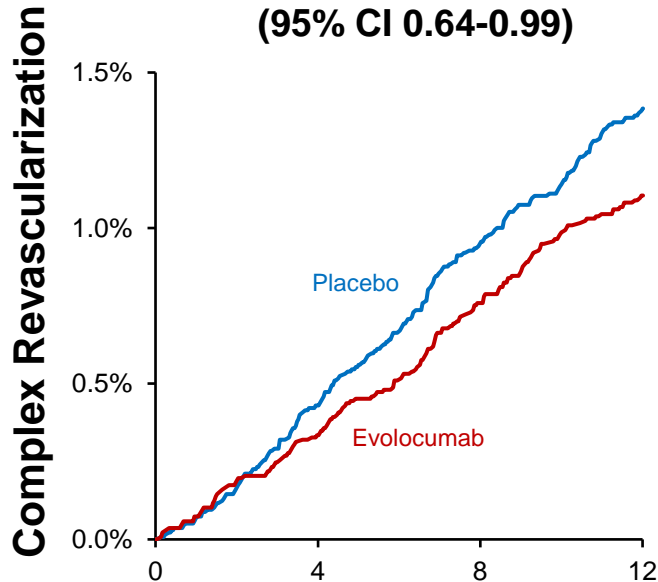
Landmark Analyses for Complex Revascularization



0-12 months

RRR 20%

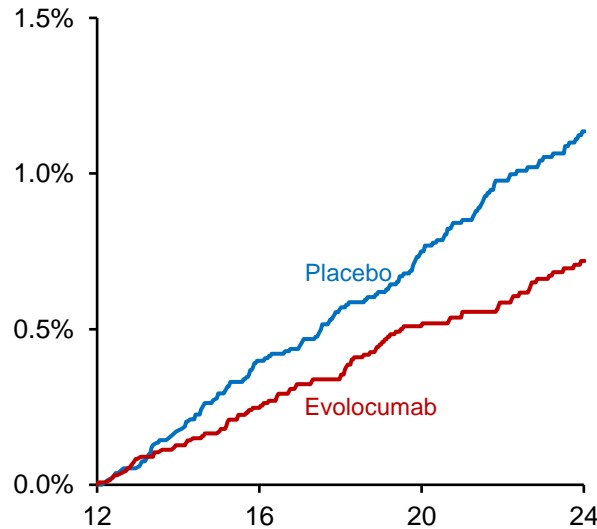
HR 0.80
(95% CI 0.64-0.99)



12-24 months

RRR 36%

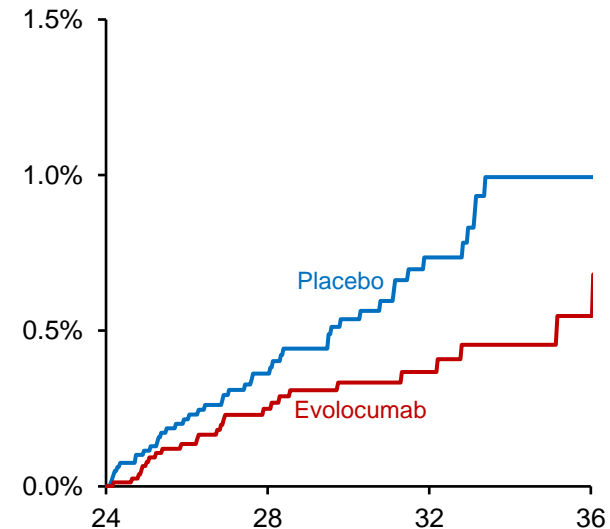
HR 0.64
(95% CI 0.49-0.84)



24-36 months

RRR 41%

HR 0.59
(95% CI 0.37-0.96)



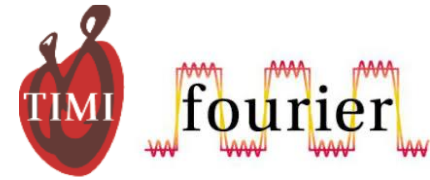
Time Since Randomization (Months)



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Limitations



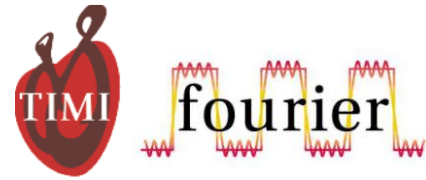
- Granular coronary anatomic information was not available at baseline, precluding comparison to pre-randomization status.
- Anatomic detail is only known for patients who underwent revascularization during the trial.
- Individual coronary angiograms were not available; review depended on clinical documentation from revascularization procedures.



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Conclusion



- Adding evolocumab to statin therapy reduced the risk of developing complex coronary artery disease requiring revascularization, including complex PCI and CABG individually.
- Together with prior coronary imaging findings, these data suggest very aggressive LDL-C lowering may have beneficial effects on coronary atherosclerosis burden, anatomical complexity, and the need for coronary revascularization.