

Original Investigation

September 21, 2022

Complete Revascularization vs Culprit Lesion–Only Percutaneous Coronary Intervention for Angina-Related Quality of Life in Patients With ST-Segment Elevation Myocardial Infarction

JAMA Cardiol. 2022;7(11):1091-1099. doi:10.1001/jamacardio.2022.3032

Key Points

Question In patients with ST-segment elevation myocardial infarction and multivessel coronary artery disease, does a strategy of complete revascularization improve angina-related quality of life compared with culprit lesion–only percutaneous coronary intervention?

Findings In this secondary analysis of a randomized clinical trial of 4041 patients, angina status improved in both revascularization groups. More patients were free of angina in the complete revascularization compared with the culprit lesion–only percutaneous coronary intervention group.

Meaning A complete revascularization strategy resulted in a slightly greater proportion of patients being angina-free compared with a culprit lesion–only strategy; this modest incremental improvement in health status is in addition to the established benefit of complete revascularization in reducing cardiovascular events.

Abstract

Importance In patients with multivessel coronary artery disease (CAD) presenting with ST-segment elevation myocardial infarction (STEMI), complete revascularization reduces major cardiovascular events compared with culprit lesion–only percutaneous coronary intervention (PCI). Whether complete revascularization also improves angina-related health status is unknown.

Objective To determine whether complete revascularization improves angina status in patients with STEMI and multivessel CAD.

Design, Setting, and Participants This secondary analysis of a randomized, multinational, open label trial of patient-reported outcomes took place in 140 primary PCI centers in 31 countries. Patients presenting with STEMI and multivessel CAD were randomized between February 1, 2013, and March 6, 2017. Analysis took place between July 2021 and December 2021.

Interventions Following PCI of the culprit lesion, patients with STEMI and multivessel CAD were randomized to receive either complete revascularization with additional PCI of angiographically significant nonculprit lesions or to no further revascularization.

Main Outcomes and Measures Seattle Angina Questionnaire Angina Frequency (SAQ-AF) score (range, 0 [daily angina] to 100 [no angina]) and the proportion of angina-free individuals by study end.

Results Of 4041 patients, 2016 were randomized to complete revascularization and 2025 to culprit lesion–only PCI. The mean (SD) age of patients was 62 (10.7) years, and 3225 (80%) were male. The mean (SD) SAQ-AF score increased from 87.1 (17.8) points at baseline to 97.1 (9.7) points at a median follow-up of 3 years in the complete revascularization group (score change, 9.9 [95% CI, 9.0-10.8]; $P < .001$) compared with an increase of 87.2 (18.4) to 96.3 (10.9) points (score change, 8.9 [95% CI, 8.0-9.8]; $P < .001$) in the culprit lesion–only group (between-group difference, 0.97 points [95% CI, 0.27-1.67]; $P = .006$). Overall, 1457 patients (87.5%) were free of angina (SAQ-AF score, 100) in the complete revascularization group compared with 1376 patients (84.3%) in the culprit lesion–only group (absolute difference, 3.2% [95% CI, 0.7%-5.7%]; $P = .01$). This benefit was observed mainly in patients with nonculprit lesion stenosis severity of 80% or more (absolute difference, 4.7%; interaction $P = .02$).

Conclusions and Relevance In patients with STEMI and multivessel CAD, complete revascularization resulted in a slightly greater proportion of patients being angina-free compared with a culprit lesion–only strategy. This modest incremental improvement in health status is in addition to the established benefit of complete revascularization in reducing cardiovascular events.