

Benefits of complete revascularization confirmed in older patients with ST-elevation myocardial infarction

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The benefits of complete revascularization over culprit-only coronary artery revascularization were confirmed in older patients with ST-segment elevation myocardial infarction (STEMI) and multivessel disease over the first 4 years, according to late-breaking research presented in a Hot Line session today at [ESC Congress 2024](#).

"Treating culprit and non-culprit lesions with complete [revascularization](#) is the standard treatment for patients with STEMI and multivessel disease. However, this strategy is currently underused in [older patients](#) and the benefits of complete revascularization compared with culprit-lesion only revascularization remain a topic for debate.

"We performed the EARTH-STEMI [meta-analysis](#) of data from patients aged 75 years or older included in several different trials and were able to confirm the benefits of complete revascularization in the first 4 years after the event," explained study presenter, Professor Gianluca Campo from the University Hospital of Ferrara, Ferrara, Italy.

Recent trials, such as the COMPLETE trial² demonstrated the superiority of complete revascularization in patients with STEMI and multivessel disease. The FIRE trial then confirmed the benefits in older patients at 1 year but included patients with either STEMI or non-STEMI.³ The individual patient-level EARTH-STEMI meta-analysis combined data on outcomes from older patients with STEMI from several trials to expand the knowledge base in a larger group of older patients with longer follow-up.

In the meta-analysis, databases were systematically searched to identify randomized [clinical trials](#) comparing complete vs. culprit-only revascularization in patients with MI and multivessel disease. Individual patient-level data were collected from the selected trials for patients aged 75 years or older with STEMI. The primary endpoint was a composite of death, myocardial infarction, and ischemia-driven

revascularization. The key secondary endpoint was cardiovascular death and myocardial infarction.

In total, seven trials were identified: COMPLETE,² FIRE,³ FULL REVASC,⁴ DANAMI-3–PRIMULTI,⁵ COMPARE ACUTE,⁶ Hamza et al.,⁷ and CvLPRIT.⁸ Around one-fifth (19%) of the patients included in these trials were aged 75 years or older.

Of the 1,733 patients aged 75 years or older included in the meta-analysis, 816 received complete revascularization and 917 received culprit-only revascularization. The median age was 79 years old and 15% were aged more than 85 years. Around one-third were female (34%). Follow-up ranged from 6 months to 6.2 years (median 2.5 years), with 20% of patients having follow-up data at 4 years.

Complete revascularization was associated with a significant reduction in the primary endpoint compared with culprit-only revascularization at 4 years (adjusted hazard ratio [aHR] 0.78; 95% confidence interval [CI] 0.63–0.96; $p=0.005$). At the longest follow-up, the difference between the groups was not significant (aHR 0.83; 95% CI 0.69–1.01; $p=0.063$).

At the longest follow-up, there was a 24% reduction in cardiovascular death or [myocardial infarction](#) with complete vs. culprit-only revascularization (aHR 0.76; 95% CI 0.58–0.99; $p=0.046$). There was no difference between the two groups for all-cause mortality (aHR 1.03; 95% CI 0.80–1.32; $p=0.818$), cardiovascular death (aHR 0.79; 95% CI 0.56–1.02; $p=0.184$), or non-cardiovascular death (aHR 1.40; 95% CI 0.97–2.02; $p=0.115$). Ischemia-driven revascularization was significantly reduced in the complete vs. culprit-only group (HR 0.52; 95% CI 0.34–0.85; $p=0.002$). There were no significant differences between the groups in the safety endpoints of stroke, stent thrombosis, major bleeding, or contrast-associated [acute kidney injury](#).

"At least in the first 4 years, complete revascularization improved outcomes in older patients with STEMI and multivessel disease. A limitation is the lack of patients followed up beyond 4 years and we await additional data from the FIRE trial to provide further information on longer-term outcomes," concluded Professor Campo.

Provided by European Society of Cardiology

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