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Long-Term Outcomes of Complete Revascularization with Percutaneous Coronary Intervention in Acute Coronary Syndromes

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Abstract

Objectives:

The aim of this study was to evaluate the long-term outcomes of patients with acute coronary syndromes (ACS) with multivessel disease undergoing percutaneous coronary intervention (PCI).

Background:

Controversy exists regarding the benefit of multivessel PCI across the spectrum of ACS.

Methods:

A total of 9,094 patients with ACS and multivessel disease (≥70% stenosis in 2 or more major epicardial vessels) undergoing PCI from the Alberta COAPT (Contemporary Acute Coronary Syndrome Patients Invasive Treatment Strategies) registry (April 1, 2007, to March 31, 2013) were reviewed. Comparisons were made between patients who underwent complete revascularization and those with incomplete revascularization. Complete revascularization was defined as multivessel PCI with a residual angiographic jeopardy score ≤10%. Associations between revascularization status and all-cause death or new myocardial infarction

(primary composite endpoint) and all-cause death, new myocardial infarction, or repeat revascularization (secondary composite endpoint) were evaluated.

Results:

Of the study cohort, 66.0% underwent complete revascularization. Compared with incomplete revascularization, the primary composite endpoint occurred less frequently with complete revascularization (event rate within 5 years 15.4% vs. 22.2%; inverse probability-weighted hazard ratio [IPW-HR]: 0.78; 95% confidence interval [CI]: 0.73 to 0.84; $p < 0.0001$). The secondary composite endpoint was less likely to occur with complete revascularization (event rate within 5 years 23.3% vs. 37.5%; IPW-HR: 0.61; 95% CI: 0.58 to 0.65; $p < 0.0001$). Complete revascularization was associated with a reduction in all-cause death (IPW-HR: 0.79; 95% CI: 0.73 to 0.86; $p = 0.0004$), new myocardial infarction (IPW-HR: 0.76; 95% CI: 0.69 to 0.84; $p < 0.0001$), and repeat revascularization (IPW-HR: 0.53; 95% CI: 0.49 to 0.57; $p < 0.0001$).

Conclusions:

Results from this large contemporary registry of patients with ACS and PCI for multivessel disease suggest that complete revascularization occurs commonly and is associated with improved clinical outcomes (including survival) within 5 years.

Keywords:

Acute coronary syndromes; complete revascularization; multivessel disease; percutaneous coronary intervention.

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Observational Study

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