

Does off-pump coronary artery bypass reduce mortality, morbidity, and resource utilization when compared with conventional coronary artery bypass? A meta-analysis of randomized trials.

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Abstract

The authors undertook a meta-analysis of 37 randomized trials (3369 patients) of off-pump coronary artery bypass surgery versus conventional coronary artery bypass surgery. No significant differences were found for 30-day mortality (odds ratio [OR], 1.02; 95% confidence interval [CI], 0.58-1.80), myocardial infarction (OR, 0.77; 95%CI, 0.48-1.26), stroke (OR, 0.68; 95%CI, 0.33-1.40), renal dysfunction, intraaortic balloon pump, wound infection, rethoracotomy, or reintervention. However, off-pump coronary artery bypass surgery significantly decreased atrial fibrillation (OR, 0.58; 95%CI, 0.44-0.77), transfusion (OR, 0.43; 95%CI, 0.29-0.65), inotrope requirements (OR, 0.48; 95%CI, 0.32-0.73), respiratory infections (OR, 0.41; 95%CI, 0.23-0.74), ventilation time (weighted mean difference, -3.4 h; 95%CI, -5.1 to -1.7 h), intensive care unit stay (weighted mean difference, -0.3 days; 95%CI -0.6 to -0.1 days), and hospital stay (weighted mean difference, -1.0 days; 95%CI -1.5 to -0.5 days). Patency and neurocognitive function results were inconclusive. In-hospital and 1-yr direct costs were generally higher for conventional coronary artery bypass surgery versus off-pump coronary artery bypass surgery. Therefore, this meta-analysis demonstrates that mortality, stroke, myocardial infarction, and renal failure were not reduced in off-pump coronary artery bypass surgery; however, selected short-term and mid-term clinical and resource outcomes were improved compared with conventional coronary artery bypass surgery.

Comment in

[Underreporting of conversion from off-pump coronary artery bypass surgery.](#) [Anesthesiology. 2005]

[Off-pump coronary artery bypass: randomized trials, real-world experience, clinical relevance, and statistical significance.](#) [Anesthesiology. 2005]

[Off-pump coronary artery bypass and the hypothesis from which it grew: is it yet to be tested? What are the downsides of the lingering questions?](#) [Anesthesiology. 2005]