

## CABG on pump versus off pump



cabg on pump versus off pump: Latest results from PubMed

URL: [https://pubmed.ncbi.nlm.nih.gov/rss-feed/?feed\\_id=18kVvJQ-rxksbnbBVZ9gzxD-2JhHiQQzw9T8Qyaa6bVDBpTUF5&utm\\_content=18kVvJQ-rxksbnbBVZ9gzxD-2JhHiQQzw9T8Qyaa6bVDBpTUF5&ff=20250703115530&utm\\_medium=rss&v=2.18.0.post9+e462414&utm\\_source=Other](https://pubmed.ncbi.nlm.nih.gov/rss-feed/?feed_id=18kVvJQ-rxksbnbBVZ9gzxD-2JhHiQQzw9T8Qyaa6bVDBpTUF5&utm_content=18kVvJQ-rxksbnbBVZ9gzxD-2JhHiQQzw9T8Qyaa6bVDBpTUF5&ff=20250703115530&utm_medium=rss&v=2.18.0.post9+e462414&utm_source=Other)

Actualizado: hace 10 semanas 4 días

### [Impact of low cardiac function and diabetes mellitus on survival and causes of death following coronary artery surgery](#)

Vie, 06/27/2025 - 10:00

Interdiscip Cardiovasc Thorac Surg. 2025 Jun 19;ivaf144. doi: 10.1093/icvts/ivaf144. Online ahead of print.

#### ABSTRACT

**OBJECTIVES:** To determine the differential impact of low cardiac function (ejection fraction [EF]  $\leq$  35%) and diabetes mellitus (DM) on survival and to identify causes of death after coronary artery bypass grafting (CABG).

**METHODS:** Overall, 1036 patients who underwent isolated CABG between 2009 and 2022 were divided into four groups based on EF and DM. Kaplan-Meier analysis was performed to calculate each group's estimated survival. Inter-group multivariate Cox regression was performed with the reference group showing EF  $>$  35% and DM (-). Additional Cox regressions were performed to investigate the associations of EF  $\leq$  35% and DM (+) with death from heart failure, myocardial infarction, cancer, pneumonia, cerebrovascular disease, and renal failure.

**RESULTS:** Off-pump techniques were used in 980 patients (95%). Patient population and estimated 10-year postoperative survival were as follows: EF  $>$  35% DM (-), 430, 75.1%; EF  $>$  35% DM (+), 456, 66.3%; EF  $\leq$  35% DM (-), 73, 62.5%; and EF  $\leq$  35% DM (+), 77, 53.5%. Hazard ratios (HRs) (P values) for the three groups were as follows: EF  $>$  35% DM (+), 1.53 (0.006); EF  $\leq$  35% DM (-), 1.84 (0.017); and EF  $\leq$  35% DM (+), 2.23 (0.001). For death from heart failure, HR (P value) for EF  $\leq$  35% versus EF  $>$  35% was 3.62 (0.012). For deaths from cancer and pneumonia, HRs (P values) for DM (+) versus DM (-) were 1.73 (0.097), and 2.72 (0.046), respectively.

**CONCLUSIONS:** EF  $\leq$  35% and DM (+) are associated with worse post-CABG survival. Each is associated with specific causes of death.

PMID:[40577802](#) | DOI:[10.1093/icvts/ivaf144](#)

Categorías: [Cirugía coronario](#)

### [Short-term outcomes of off-pump vs. on-pump coronary artery bypass grafting in left main coronary artery disease: a systematic review and meta-analysis](#)

Jue, 06/19/2025 - 10:00

Indian J Thorac Cardiovasc Surg. 2025 Jul;41(7):852-862. doi: 10.1007/s12055-025-01907-w. Epub 2025 Mar 6.

#### ABSTRACT

**BACKGROUND:** The efficacy and safety of off-pump relative to on-pump coronary artery bypass grafting (CABG) in patients with left main coronary artery disease (LMCAD) remain unclear.

**OBJECTIVES:** Conduct a meta-analysis assessing the outcomes following CABG comparing off-pump CABG vs. on-pump CABG.

**METHODS:** MEDLINE, Cochrane, and Embase were examined for randomized controlled trials (RCTs) and observational studies that communicated outcomes after off-pump vs. on-pump CABG in patients with LMCAD. Odds ratios (OR) with 95% confidence intervals (CI) were pooled with a random-effects model. Cochrane recommendations for quality assessment and risk of bias were performed. This study was registered in the PROSPERO platform, ID: CRD42023451467.

**RESULTS:** One RCT and 17 observational studies with 16,848 patients were included, 6735 (40.0%) of whom underwent off-pump CABG. In patients with LMCAD undergoing CABG, off-pump CABG was associated with a lower incidence of all-cause mortality (OR 0.52, 95% CI 0.38-0.71;  $p < 0.001$ ), acute renal dysfunction (OR 0.40; 95% CI 0.27-0.59;  $p < 0.001$ ), postoperative use of intra-aortic balloon pump (IABP) (OR 0.38; 95% CI 0.22-0.64;  $p < 0.01$ ), and wound infection (OR 0.66; 95% CI 0.48-0.9;  $p = 0.01$ ). There was no difference between the groups for myocardial infarction (OR 0.81; 95% CI 0.59-1.11;  $p = 0.193$ ), stroke, or transitional ischemic attack (TIA) (OR 0.64; 95% CI 0.38-1.06;  $p = 0.085$ ). The number of grafts per patient was also lower in the off-pump CABG group (mean deviation (MD) -0.32; 95% CI -0.50 to -0.14;  $p < 0.001$ ). After a mean follow-up of 38.1 months, no significant difference in all-cause mortality incidence was observed between the two techniques (OR 0.72; 95% CI 0.30-1.74;  $p = 0.47$ ). This underscores that the reduction in mortality rates was primarily driven by short-term outcomes.

**CONCLUSION:** In this meta-analysis with 16,848 patients with LMCAD undergoing CABG, off-pump CABG was associated with lower rates of all-cause mortality, acute renal dysfunction, IABP use, and wound infection compared with on-pump CABG.

**GRAPHICAL ABSTRACT:** On-pump versus off-pump CABG in patients with LMCAD.

**SUPPLEMENTARY INFORMATION:** The online version contains supplementary material available at [10.1007/s12055-025-01907-w](https://doi.org/10.1007/s12055-025-01907-w).

PMID:[40535226](https://pubmed.ncbi.nlm.nih.gov/40535226/) | PMC:[PMC12170468](https://pubmed.ncbi.nlm.nih.gov/PMC12170468/) | DOI:[10.1007/s12055-025-01907-w](https://doi.org/10.1007/s12055-025-01907-w)

Categorías: [Cirugía coronario](#)

### [Perioperative Red Blood Cell Transfusion and Long-Term Mortality in Coronary Artery Bypass Grafting: On-Pump and Off-Pump Analysis](#)

Sáb, 04/26/2025 - 10:00

J Clin Med. 2025 Apr 13;14(8):2662. doi: 10.3390/jcm14082662.

#### ABSTRACT

**Background/Objectives:** The impact of different coronary artery bypass grafting (CABG) strategies, particularly on-pump versus off-pump techniques, on red blood cell (RBC) transfusions and their associated outcomes has not been fully investigated. This study aims to evaluate the association between RBC transfusion and survival in CABG patients, focusing on-pump strategy. **Methods:** Data from CABG patients were retrieved from the National Health Insurance Service database (2003 to 2019). Perioperative RBC transfusions were classified into three groups: no transfusion, RBC 1, and RBC  $\geq 2$  units. The primary endpoint was all-cause mortality rate. Subgroup analysis assessed the impact of RBC transfusion on mortality across the conventional on-pump (CCAB) and off-pump (OPCAB) groups. **Results:** Among the 6150 participants who underwent CABG, 2028 underwent CCAB and 4122 underwent OPCAB. The mean age was  $66.2 \pm 9.7$  years, with a mean follow-up of 2.9

(2.53-3.35) years. Multivariable analysis showed a significant association between transfusion of  $\geq 2$  RBC units and increased mortality risk (HR 2.34 [1.65-3.32],  $p < 0.001$ ). Subgroup analysis showed a similar trend in both CCAB and OPCAB groups ( $p$  for interaction = 0.2). Transfusion of  $\geq 2$  units significantly increased mortality in OPCAB (HR 2.28 [1.55-3.37],  $p < 0.001$ ) but not in CCAB (HR 2.96 [0.97-9.06],  $p = 0.057$ ). OPCAB and surgery at large volume center was associated with a reduced risk of RBC transfusion ( $p < 0.01$ ). **Conclusions:** Increased RBC transfusion is associated with higher long-term mortality in patients undergoing CABG. Based on a large cohort predominantly consisting of OPCAB patients, OPCAB is associated with decreased RBC transfusion requirements.

PMID:[40283492](#) | PMC:[PMC12027956](#) | DOI:[10.3390/jcm14082662](#)

Categorías: [Cirugía coronario](#)

### [Microaxial pump-supported coronary surgery without CPB to optimize outcome in severely impaired left ventricles](#)

Jue, 04/24/2025 - 10:00

ESC Heart Fail. 2025 Apr 24. doi: 10.1002/ehf2.15261. Online ahead of print.

#### **ABSTRACT**

**AIMS:** Cardiopulmonary bypass (CPB) is the standard approach for coronary artery bypass grafting (CABG) in advanced ischaemic cardiomyopathy. Microaxial pump support has been envisioned to allow for beating-heart CABG without CPB (MPCAB), thereby avoiding CPB-inherent complications. This study aims to compare the in-hospital and follow-up outcome of MPCAB versus CPB-CABG in patients with severely impaired left ventricular function.

**METHODS AND RESULTS:** Eleven patients suffering from three-vessel coronary artery disease with median ejection fraction of 27% and deemed appropriate for CABG according to a heart team decision underwent MPCAB (support up to 5.5 L/min). Propensity score matching generated a CPB-CABG control group ( $n = 33$ ). The primary endpoint was defined as death from any cause by the end of the follow-up (up to 4 years). MPCAB enabled continuous intraoperative and postoperative haemodynamic stabilization and complete myocardial revascularization. After CPB-CABG, additional mechanical circulatory support was required in 45.5% (vs. 9.1% in MPCAB;  $P = 0.0363$ ). The follow-up all-cause mortality after MPCAB amounted to 0% (vs. 33.3% after CPB-CABG;  $P = 0.0414$ ; NNT = 3). MPCAB patients showed a significantly decreased occurrence of major adverse cardiovascular events (MACE: 0% vs. 39.4%;  $P = 0.0189$ ).

**CONCLUSIONS:** MPCAB allows for complete surgical revascularization without the necessity of extracorporeal circulation in spite of severely impaired left ventricular function. This first comparative study on the outcome after MPCAB versus CPB-CABG demonstrates a significantly decreased risk of death as well as MACE in MPCAB patients. The MPCAB concept expands the spectrum of patients eligible for CABG without CPB towards patients with severely impaired left ventricular function.

PMID:[40274291](#) | DOI:[10.1002/ehf2.15261](#)

Categorías: [Cirugía coronario](#)

### [Comparison of Outcomes Between Total Arterial Off-Pump Versus On-Pump Coronary Artery Bypass Surgery: A Meta-Analysis and Meta-Regression](#)

Mié, 04/23/2025 - 10:00

Am J Cardiol. 2025 Aug 15;249:43-50. doi: 10.1016/j.amjcard.2025.04.007. Epub 2025 Apr 21.

**ABSTRACT**

An essential aspect of achieving early optimal outcomes in coronary artery bypass grafting (CABG) is the careful selection of conduits. Total arterial grafting (TAG) has been debated, and recent studies suggest its benefits, especially when combined with off-pump coronary artery bypass grafting (OPCAB). We conducted a systematic review and meta-analysis of studies comparing outcomes of TAG in OPCAB versus on-pump CABG (ONCAB), using data from OVID MEDLINE, EMBASE, SCOPUS, and PUBMED. Seven studies with a total of 5417 patients were included. Short-term outcomes showed no significant differences in perioperative complications between TAG-OPCAB and TAG-ONCAB, but TAG-OPCAB was associated with reduced short-term mortality (OR 0.48, 95% CI [0.26, 0.89],  $p = 0.02$ ), lower incidence of postoperative low cardiac output, atrial fibrillation, and MACCEs, as well as shorter intubation duration and hospital stay. Meta-regression did not reveal any associations between pre- or intraoperative variables and short-term mortality. In conclusion, TAG-OPCAB demonstrates favorable short-term outcomes and may be considered a safe and effective strategy in selected patients, while long-term outcomes remain inconclusive due to limited data.

PMID:[40268129](#) | DOI:[10.1016/j.amjcard.2025.04.007](#)Categorías: [Cirugía coronario](#)[Long-Term Clinical and Angiographic Outcomes of Off-Pump Versus On-Pump Coronary Artery Bypass Grafting](#)

Vie, 03/28/2025 - 10:00

J Surg Res. 2025 May;309:8-18. doi: [10.1016/j.jss.2025.02.041](#). Epub 2025 Mar 27.**ABSTRACT**

**INTRODUCTION:** This study aimed to compare long-term outcomes in patients undergoing off-pump coronary artery bypass grafting (OPCAB) versus on-pump coronary artery bypass grafting (ONCAB) in a single-center propensity-matched population.

**METHODS:** Between January 2010 and June 2022, 2964 patients were analyzed and divided into two groups: 1671 (56.3%) patients receiving OPCAB and 1293 (43.7%) patients receiving ONCAB. Propensity score matching was performed resulting in 842 pairs.

**RESULTS:** In the matched cohort, OPCAB was associated with a reduced incidence of early stroke (odds ratio: 0.40; 95% confidence interval [0.17-0.90],  $P = 0.02$ ) as well as a reduced incidence of reoperation for bleeding and blood transfusion. The median follow-up time was 6.69 y (interquartile range: 3.47-9.83-y). OPCAB and ONCAB had comparable long-term mortality, myocardial infarction, repeat revascularization, and major adverse cardiac and cerebral events. However, OPCAB was associated with higher freedom from stroke at follow-up compared to ONCAB (hazard ratios stratified on matched pairs: 0.61; 95% confidence interval [0.39-0.95];  $P = 0.015$ ). A landmark analysis in the matched cohort was performed excluding the first 30 ds of follow-up to exclude the effect of early stroke. In the landmark analysis, OPCAB and ONCAB had comparable freedom from stroke at follow-up. Briefly, 821 patients with 2055 grafts were analyzed. The overall median time to angiogram was 3.68 y (interquartile range: 1.76-6.61). No difference was observed between OPCAB and ONCAB in the patency rates (Fitzgibbon A) of arterial grafts. However, the patency rate of saphenous vein graft was higher in the OPCAB group than in the ONCAB group (77.4% versus 71.7%,  $P = 0.04$ ).

**CONCLUSIONS:** OPCAB was associated with lower rates of stroke, reoperation for bleeding, and blood product transfusion. Meanwhile, at long-term follow-up, OPCAB and ONCAB were associated with comparable outcomes, including all-cause mortality, myocardial infarction, repeat revascularization, major adverse cardiac and cerebral events, and stroke.

PMID:[40153915](#) | DOI:[10.1016/j.jss.2025.02.041](#)

## **CABG on pump versus off pump**

Publicado en Cirugía Cardiovascular (<http://cardiociirurgia.sld.cu>)

---

Categorías: [Cirugía coronario](#)

**URL del envío (Obtenido en 09/16/2025 - 15:02):**

<http://cardiociirurgia.sld.cu/aggregator/sources/12>