

Off-Pump versus Conventional Coronary Artery Bypass Grafting: A Meta-Analysis and Consensus Statement From The 2004 ISMICS Consensus Conference.

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Abstract

BACKGROUND: : The purpose of this evidence-based consensus statement is to systematically review and meta-analyze the randomized and nonrandomized evidence comparing off-pump (OPCAB) to conventional coronary artery bypass (CCAB) surgery and to provide consensus on the role of OPCAB in low- and high-risk surgical patients.

METHODS AND RESULTS: : This consensus conference was conducted according to the American College of Cardiology (ACC)/American Heart Association (AHA) standards for development of clinical practice guidelines. The Steering Committee collated all published studies of OPCAB versus CCAB through May 2004 and developed six questions central to controversies surrounding OPCAB surgery in mortality, morbidity, and resource utilization. For mixed-risk patient populations, meta-analysis of 37 randomized clinical trials (3,369 patients, Level A) reported across a total of 53 papers, and two meta-analyses of nonrandomized trials (Level B) comparing OPCAB versus CCAB were identified. For high-risk patient populations, we performed a meta-analysis of 3 randomized and 42 nonrandomized trials (26,349 patients, Level B).

CONCLUSION: : Meta-analysis of Level A and B evidence provided the basis for the following consensus statements in patients undergoing surgical myocardial revascularization: (1) OPCAB should be considered a safe alternative to CCAB with respect to risk of mortality [Class I, Level A]; (2) With appropriate use of modern stabilizers, heart positioning devices, and adequate surgeon experience, similar completeness of revascularization and graft patency can be achieved [Class IIa, Level A]; (3) OPCAB is recommended to reduce perioperative morbidity [Class I, Level A]; (4) OPCAB may be recommended to minimize midterm cognitive dysfunction [Class IIa, Level A]; (5) OPCAB should be considered as an equivalent alternative to CCAB in regard to quality of life [Class I, Level A]; (6) OPCAB is recommended to reduce the duration of ventilation, ICU and hospital stay, and resource utilization [Class I, Level A]; (7) OPCAB should be considered in high-risk patients to reduce perioperative mortality, morbidity, and resource utilization [Class IIa, Level B].