

## Off-pump coronary artery bypass grafting: where are we now?

Off-pump coronary artery bypass (OPCAB) grafting is arguably the most thoroughly scrutinized operation in the history of surgery. Although over the last two decades hundreds of randomized controlled trials, propensity-matched analyses and observational studies have compared it with the universally recognized “gold standard” conventional on-pump coronary artery bypass grafting (CABG) the puzzle of superiority of one or the other remains unsolved and the jury is still out.

An unbiased analysis of the current best available evidence suggests that OPCAB is a safe and effective alternative to on-pump CABG with regard to hard clinical end-points, including myocardial infarction or mortality, emphasizing that both off- and on-pump CABG provide excellent and comparable results in patients requiring surgical myocardial revascularization (1). Furthermore, there is overwhelming evidence that OPCAB compared to on-pump CABG significantly reduces the odds of 30-day stroke and its benefits are more pronounced in patients at higher baseline risk (2). The biggest criticism of OPCAB remains the issue of suboptimal anastomotic technique with questionable graft patency. However, contrary to the generalized perception, evidence from the most up-to-date meta-analysis of randomized controlled trials suggests that on-pump CABG only reduces the incidence of saphenous vein graft occlusion significantly but does not affect left internal mammary artery and radial artery graft patency compared with OPCAB (3). It would not be unreasonable to say that vein graft patency after CABG remains a complex issue and there is more to it than the choice of revascularization strategy.

Irrespective of the debate about superiority of one technique over the other there is a broad consensus that success with OPCAB is limited to more proficient surgeons and the biggest hindrance to its universal adoption is the fear of deleterious patient outcomes, especially during the learning curve (4). Acceptance of OPCAB as a subspecialty that should only be performed by experienced surgeons in high-volume centers will ensure that this procedure is offered to patients needing surgical revascularization in future—predominantly high risk—without compromising outcomes.

This special issue of *JTD* is dedicated to providing an overview of OPCAB exploring the rationale, surgical aspects as well as outcomes, concerns and controversies associated with this strategy. World experts and opinion leaders with clinical experience of OPCAB have provided a thorough review of the current state of opinion and practice as regards this surgical technique. It is expected that this special issue of *JTD* will enable the readers to determine not only where we are now but also where we need to go with OPCAB.

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