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The fate at mid-term follow-up of the on-pump vs. off-pump coronary artery bypass grafting surgery.

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Abstract

AIMS:

To evaluate the fate of on-pump coronary artery bypass grafting (ON-pump CABG) vs. off-pump coronary artery bypass grafting (OP-CABG) surgery at mid-term follow-up.

METHODS:

From January 2008 to December 2010, 369 patients underwent surgical myocardial revascularization by means of OP-CABG techniques (n = 166) or with ON-pump CABG (n = 203). Data of the two groups of patients were retrospectively analyzed.

RESULTS:

As compared with OP-CABG, in the ON-pump CABG patients, mean value of Logistic EuroSCORE ( $8.1 \pm 7.8\%$  vs.  $6.2 \pm 5.9\%$ ,  $P = 0.04$ ), more extended coronary disease ( $2.7 \pm 0.5$  vs.  $2.5 \pm 0.7$  diseased vessels/patient,  $P < 0.001$ ) consequently requiring greater number of grafts/patient ( $2.9 \pm 0.9$  vs.  $2.3 \pm 0.9$ ,  $P < 0.0001$ ), and emergency surgery (12 vs. 6%,  $P = 0.03$ ) were more frequently observed. Operative mortality was 1.9% in ON-pump CABG vs. 1.2% in OP-CABG ( $P = 0.6$ ) and incidence of stroke 2.46 vs. 1.81% ( $P = 0.7$ ). The incidence of stroke was reduced at 1.2% when OP-CABG PAS-Port 'clamp-less' technique was used. Intraoperatively, costs per patient were higher for OP-CABG vs. ON-pump CABG (1.930,00 +1.050,00 &OV0556;, if PAS-port system was included, vs. 1.060,00 &OV0556; for ON-pump surgery). ICU stay ( $1.9 \pm 1.0$  days vs.  $1.4 \pm 0.7$  days) and total postoperative in-hospital stay ( $5.3 \pm 3.3$  days vs.  $5.5 \pm 3.5$  days) were similar in both groups. At 4 years, survival ( $91 \pm 13\%$  in the ON-pump CABG vs.  $84 \pm 19\%$  in the OP-CABG), freedom from major adverse cardiac events (composite end-point of all-cause death, myocardial infarction, and repeat coronary revascularization of the target lesion) ( $82 \pm 9\%$  vs.  $76 \pm 14\%$ ), and major adverse cardiac and cerebrovascular events ( $80 \pm 11\%$  vs.  $72 \pm 16\%$ ) were not significantly different. Freedom from late cardiac death was slightly significant higher after ON-pump CABG ( $98 \pm 4\%$  vs.  $90 \pm 10\%$ ,  $P = 0.05$ ).

CONCLUSION:

Mid-term freedom from composite end-points is similar after ON-pump CABG and OP-CABG. Freedom from cardiac death appears to be better after ON-pump CABG. OP-CABG needs for more expensive surgical technique. OP-CABG performed by an experienced surgical team using 'clamp-less' techniques can be an effective strategy in reducing postoperative stroke.