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Better Clinical Outcomes Using Sequential LIMA to LAD & Diagonal Compared to Diagonal & LAD Grafts

Ishay, Yaron Shlomo[1]*; Paz, Dorit*[1]*; Matsa, Menachem*[1]*; Abramov, Dan*[1]*; Lev Ran, Oren*[1]*; Raichel, Lior*[1]*; Novac, Victor*[2]*; Sahar, Gideon*[1]

[1]*Soroka Medical Center, Cardiothoracic Surgery, Beer Sheva, Israel;* [2]*Soroka Medical Center, Clinical Research Center, Beer Sheva, Israel*

Objective: To maximize the use of left internal thoracic artery (LITA) in coronary artery bypass grafting (CABG), many surgeons revascularize the left anterior descending artery (LAD) and a Diagonal branch using a single sequential LITA. In the traditional procedure the Diagonal anastomosis is performed first and the distal portion of the LITA is connected to LAD. We have adopted a different strategy by grafting first the LAD and than the diagonal -"inverted J-configuration". We reviewed the safety and clinical efficacy of this approach.
Methods: 291 consecutive patients (240 men; mean age= 60.6) were operated between 2006 - 2009 . 149 patients underwent "traditional" procedure - Diagonal & LAD (Diagonal first) and 142 underwent "inverted J-configuration" - LAD & Diagonal (LAD first). Multivariate analysis was performed looking at composite patient outcomes of death stroke, myocardial infarction, reintervention and recurrent angina (MACCE) in both groups.
Results: Preoperative profiles were comparable in the two groups. Mean follow-up duration was 30 ± 12 months. There was no significant statistical difference in the rate of death between the two groups (p=0.34) however the rate of MACCE was significant lower using the "inverted J-configuration" (LAD first) (p=0.003). The new approached was found to be protective (OR - 0.3, p=0.01) in logistic regression multivariate analysis for composite end point.
Conclusions: Revascularization of the LAD and the diagonal arteries using a skeletonized left internal thoracic artery in "inverted J" configuration is safe and feasible and resulted in better clinical outcomes compare to traditional sequential anastomosis.