Safety of Total Arterial Revascularization and Bilateral Internal Thoracic Artery Grafting in Diabetic Patients

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Objective:
To assess the safety of total arterial revascularization and bilateral internal thoracic artery grafting in diabetic patients.

Methods:
From 1148 patients who underwent CABG in our institution between 2000 and 2010, we included 319 diabetic patients; 120 patients (37.61%) had total arterial revascularization (TAR) and 199 patients (62.38%) had mixed (arterial and venous) revascularization. 192 patients (60.18%) had single internal thoracic artery grafting (SITA) and 109 patients (34.16%) had bilateral internal thoracic artery grafting (BITA). We analyzed the following early postoperative outcomes: in-hospital mortality, need for surgical reintervention due to bleeding or sternal dehiscence, mediastinitis, infectious complications, 24 hours thoracic drainage, length of stay in the intensive care unit, acute kidney failure.

Results:
There have been no significant differences between groups regarding age, sex, left ventricle ejection fraction, cardiovascular risk factors and chronic kidney disease. The mean number of distal anastomoses was 3.24±1.19 in TAR group and 2.58±0.83 in the classical CABG group (p0.001); the mean number of distal anastomoses was 2.83±0.99 in SITA group and 3.44±1.01 in BITA group (p0.001). We found no significant differences between patients with total arterial revascularization and classical CABG and between SITA and BITA groups concerning in-hospital mortality, the need for surgical reintervention, mediastinitis, infectious complications, 24 hours thoracic drainage, length of stay in the intensive care unit, postoperative acute kidney failure (p NS). In multivariate analysis, the only predictor for the need of surgical reintervention was the preoperative creatinine level (p 0.02).

Conclusions:
Total arterial revascularization and BITA grafting are safe in diabetic patients; due to better long-term results, these types of grafting are the method of choice for the surgical revascularization of diabetic patients. Special attention should be paid to patients with diabetic nephropathy and chronic kidney disease, who are at higher risk of bleeding and reintervention.