EDITORIAL

Medical Responsibility in Myocardial Revascularization of Diabetic Patients

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The article by Navia et al., "Off-pump coronary artery bypass surgery with multiple arterial grafts in diabetic patients: Short and long-term results", (1) published in this issue of the Journal, analyzed 1002 patients, 234 with diabetes (DM group) and 768 without diabetes (non-DM group). Patients in the DM group had significantly greater incidence of hypertension, hyperlipidemia, chronic renal failure and previous infarction than the non-DM group.

The authors emphasized the need to maintain blood glucose levels below 150 mg/dl during the first 24 hours with constant insulin perfusion. The surgical technique of Tector was adopted, using both internal mammary arteries, (2-6) without manipulation of the ascending aorta. The postoperative incidence of stroke was 0.4% and 0.6% for the DM and non-DM groups, respectively. The switch ratio to on-pump CABG was very low (0.59%).

Arterial grafts were used for complete arterial revascularization, with a mean of 3.28 distal anastomoses in the DM group and 3.21 in the non-DM group. Angiographic patency was over 95%.

In both groups, mortality was less than 2% and survival at 5 years was excellent: 91% in the DM group vs. 96% in non-DM patients.

In their conclusions, the authors point out that off-pump coronary bypass surgery (CABG) with multiple arterial grafts presented similar in-hospital mortality in DM and non-DM patients. They also concluded that the DM group had lower long-term survival and that postoperatory high blood glucose is an independent risk factor of greater in-hospital mortality.

Despite better coronary surgery than angioplasty results in diabetic patients with main and three vessel disease, (7-9), the benefits of CABG are still questioned.

The FREEDOM study data presented by Dr. Valentín Fuster at the American Heart Association in November 2012 (10) conclude that coronary revascularization surgery is the treatment of choice in diabetic patients with multi-vessel disease. This study included 952 patients with percutaneous coronary intervention / drug-eluting stent (PCI/DES) and 947 patients with CABG. The primary outcome, death due to acute myocardial infarction (AMI) or acute stroke at 5 years was 26.6% in the PCI group and 18.7% in the CABG group ($p < 0.005$).

The incidence of AMI at 5 years was significantly lower in the surgery group than in the stent group: 6% vs. 13.9% ($p < 0.0001$).

When all the causes of mortality at 5 years were analyzed, the incidence was 16.3% in the PCI group vs. 10.9% in the CABG group ($P = 0.049$).

Regarding a new coronary revascularization at one year, the incidence in the stent group was 13% vs. 5% in the CABG group ($p < 0.0001$) and at 5 years the incidence was 30% vs. 13%.

The FREEDOM study showed that coronary surgery is the treatment of choice for diabetic patients with multi-vessel disease.

It is known that 25-30% of patients derived for a diagnostic hemodynamic coronariography are diabetic. The problem arises when the interventional cardiologist looks at the coronariography and asks the patient: "Do you want us to solve the problem you have in your coronary arteries right away?" The patient's answer is obvious, as patients always prefer a less aggressive, albeit less efficient treatment.

It is essential to perform CABG in diabetic patients with arterial conduits, and the use of the saphenous vein should be definitely ruled out from surgical practice, except in very specific patients.

What will clinical cardiologists do when they analyze the FREEDOM study? Will they send diabetic patients with multi-vessel disease to surgery?

It is incredible and difficult to explain that despite numerous studies, such as the BARI, ARTS, CARDIA and SYNTAX trials, (9, 11-13) suggest that surgery is more efficient than stenting in diabetic patients, angioplasty is still the treatment of choice in many centers.

The ad-hoc coronariography is only indicated in patients with unstable angina, and in the rest of the cases, patients must have enough time and the necessary information to choose the adequate treatment.

Rev Argent Cardiol 2013;81:439-440. http://dx.doi.org/10.7775/rac.v81.i6.3305
SEE RELATED ARTICLE: Rev Argent Cardiol 2013;81:475-482 - http://dx.doi.org/10.7775/rac.v81.i6.1905

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In 2004, our group published (14) off-pump CABG data, with double-skeletonized internal mammary artery grafting in 293 DM patients, with excellent results and without significant differences with the non-DM group in terms of mediastinitis, postoperative atrial fibrillation and mortality. Complete arterial revascularization was performed in 94.5% of patients.

The FREEDOM study and the surgical results obtained in diabetic patients cannot be ignored and will have an important impact in the current treatment of coronary disease. We are undoubtedly facing an ethical problem, a responsibility task

Conflicts of interest

None declared

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