eComment. Complexity of coronary artery disease and outcomes after complete revascularization with long segmental reconstruction of the left anterior descending artery

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Yoshihiro et al. present important data regarding the effect of Synergy between Percutaneous Coronary Intervention with Taxus and Cardiac Surgery (SYNTAX) score on survival after long segmental reconstruction of the left anterior descending artery using the left internal thoracic artery [1]. Their work raises a number of important questions.

The study period spanning 1995–2003 indicates the unusual nature of this procedure in their practice as only 102 patients were available for analysis. This is consistent with our practice, however such a long time span, in a small patient sample, may require a sophisticated analysis to take account of advances in care [2].

Statistical significance has to be biologically plausible to obtain scientific acceptance. The finding on univariate analysis that a high SYNTAX score is associated with poor survival in their practice as only 102 patients were available for analysis. This is consistent with an alternative surgical approach to achieve adequate myocardial revascularization.

Soylu and colleagues conducted a meta-analysis of 54,440 patients (7,366 CABG + CE) regarding the short- and long-term outcomes of CE compared to CABG alone [3]. Concomitant CE significantly increased 30-day mortality (OR = 1.69, CI = 1.49–1.92; P = 0.00001), perioperative (OR = 2.10, CI = 1.82–2.43, P < 0.00001) and postoperative MI (OR = 3.34, CI = 1.74–6.41, P = 0.0003) when compared with CABG. Moreover, there was an increased incidence of major postoperative adverse events (pulmonary complications, renal failure, ventricular arrhythmias) and hospitalization [3]. The angiographic patency of endarterectomized vessels at the last follow-up was also reduced (OR = 0.57, CI = 0.36–0.88, P = 0.01) [3].

Furthermore, Wang et al. in their meta-analysis of 17,600 patients (2,712 CABG + CE) found that endarterectomized patients carried an increased risk of cerebrovascular accidents (OR = 1.48, CI = 1.08–2.02, P = 0.01) attributed to a multifactorial etiology (endothelial dysfunction, thrombogenicity, thromboembolism, CPB time) and recommended double antiplatelet therapy [4].

As to whether or not to use CPB, in their best evidence topic, Soylu et al. did not find a significant difference. The overall incidence of postoperative MI was 6.1% and comparable between the two methods. As expected, multiple endarterectomies performed with the closed technique, specifically to the right coronary artery, demonstrated a higher incidence of postoperative MI and mortality [5].

The same group of authors has also reported that open CE may be associated with a lower 30-day mortality as opposed to closed CE, and even though there is insufficient data to evaluate the impact of open CE on MI incidence, the use of the internal thoracic artery (ITA) seems to be beneficial.

In view of the above, combined with the lack of randomized controlled trials and the current research data being characterised by significantly heterogeneous groups of patients and methodological approaches, CE should be considered very carefully [3]. If CE is the choice of treatment, the open technique with ITA yields acceptable results [1].

The assessment of the patient on an individual basis by a multidisciplinary team including experienced cardiac surgeons and interventional cardiologists is of paramount importance. In particular, attention has to be paid to the complexity of the coronary anatomy, physiological status and comorbidities of the patient, ultimately aiming at complete functional revascularization with the appropriate surgical technique [1, 3–5].

Finally, at least dual antiplatelet therapy combined with a close follow-up are essential in order to optimize the long-term outcomes of this challenging group of patients.

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References


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References


