

An exploratory study on the appropriateness in the use of Coronary Artery Bypass Graft Surgery (CABG) in Brazil

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Objective:

To study the appropriateness and necessity of use of CABG in Brazilian patients.

Methods:

This is an exploratory study about appropriateness of CABG in Brazil based on retrospective assessment to measure the proportion of patients that received inappropriate care. The study population corresponded to 481 patients admitted to a public, specialized cardiology hospital in the state of Rio de Janeiro between January 2002 and August 2004. Data were obtained from the Cardiac Surgery database, developed by the research group to collect information for the assessment of the quality of care in cardiac surgery. It contains 118 variables on patient risk factors and social characteristics, use of medications, data on the surgery, surgeons, length of stay, complications and other outcomes. The same definitions of appropriateness and necessity applied by the European study adapted from RAND/UCLA appropriateness method were used¹. That study classified four clinical scenarios: "necessary"; "appropriate", "unclear" and "inappropriate". A panel of specialists grouped a list of indications into these four Chapters representing the primary clinical condition of the patient: stable angina; unstable angina; acute myocardial infarction - less than 12 hours - and post-myocardial infarction - more than 12 hours up to 28 days. Chapters were subdivided by using the extent of vessel disease, ejection fraction, stress test results, surgical risk (Modified Parsonnet Scale) and use of IV nitrates. In the adaptation process, each Chapter was reviewed and redesigned by the research team, which include surgeons, clinicians and public health professionals. Chapter 3 "Acute Myocardial Infarction in the first 12 hours" was not included in this because the hospital examined does not admit emergency cases. Chapter 4 remained only with one sub-group: "Angina Post-Infarction". A fifth chapter named "Asymptomatic" was created to group patients without angina without associating this symptom with Myocardial. The distribution of patients in the four clinical scenarios was analysed across gender, skin colour and financing scheme (public sector or private insurance). We used the skin colour categories of the Brazilian Census Bureau. Indigenous and "yellow" were excluded due to low numbers and "blacks" and "pardos" (coloured) were aggregated due to the same reason.

Results: Among patients submitted to CABG, 74% were male, the mean age was 62 years, 72.3% were white and 71.3% were financed by the public sector. The mean Parsonnet score was nine. 7.3% of the patients were submitted to both CABG and valve surgery. Mean length of stay was 22.5 days and death rate at discharge was 6.0%. In the assessment of overuse, 7.5% of cases were excluded due to missing data. The use of CABG was classified as necessary in 53.7% (n=239) patients, appropriate in 8.5% (n=38) patients, unclear in 33.7% (n=150) patients and inappropriate in 4% (n=18) patients. Overuse varied across gender and financing scheme. Inappropriate care was more frequent amongst males (4.6%) compared to females (2.6%). Patients financed by the public sector were more likely to be classified as having received a "necessary" procedure (54.4%) than those financed by private insurance (51.9%), while private insurance patients were more likely to be classified as "appropriate" (13.2%) as compared with patients whose surgery was financed by the public sector (6.6%). "Blacks" were likely to receive more adequate care than "whites". Composite complication rate was greater in patients with inappropriate care: 56.4% as compared to appropriate (43.2%) and necessary (47.2%).

Conclusions:

The method for evaluating appropriateness is easily adaptable and proved useful for screening overuse among patients submitted to CABG. These preliminary results suggest that a publicly oriented provider may discriminate favourably to the poor. Source of financing associated with greater reimbursement fees may be associated with overuse putting patients on increased risk of adverse outcomes. Increasing the number of variables to scrutinize appropriateness can diminish the proportion of cases considered uncertain. The appropriateness study proved to be a useful tool to identify opportunities to improve quality of care.

1) Fitch K. et al. European criteria for the Appropriateness and Necessity of Coronary Revascularization Procedures. <http://www.fac.org.ar/scvc/lave/surgery/fitch/fitchi.htm>. Accessed in February 2005.