

14th Annual Meeting of the International Society of Technology Assessment in Health Care (ISTAHC). Ottawa, Canada, 1998.

Measuring and correcting internal inconsistencies in rating the appropriateness of coronary revascularization procedures.

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Abstract

Objective: To measure and correct internal inconsistencies produced in rating the appropriateness of percutaneous transluminal coronary angioplasty (PTCA) and coronary artery bypass graft surgery (CABG) in Spain.

Method: The RAND/UCLA appropriateness method was used to develop standards for the performance of coronary revascularization by a 10-member expert panel. A list of 1,826 hypothetical indications for coronary revascularization was developed, and each indication was rated as “appropriate” (A) “uncertain” (U) or “inappropriate” (I) for PTCA and CABG based on the panel’s median score and level of agreement. The appropriateness ratings were then reviewed for internal consistency with regard to 5 factors: 1) surgical risk (high vs. low/moderate); 2) ejection fraction; 3) stress test (positive vs. negative or inconclusive/not done, and negative vs. inconclusive/not done); 4) medical therapy (optimal vs. less than optimal), and 5) disease severity (only for chapter on palliative PTCA). For example, if the panel had classified PTCA as appropriate for a patient with a negative stress test, and uncertain or inappropriate for the same patient with a positive stress test, this was considered to be one inconsistency. All panel members were invited to a meeting to discuss the inconsistencies they considered clinically relevant and to revise the appropriateness ratings accordingly.

Results: A total of 96 internal inconsistencies was detected (5.3% of 1,826 indications), as follows: surgical risk (62), ejection fraction (15), stress test (16), medical therapy (1), and disease severity (2). Each type of inconsistency was marked on the list of indications using a different symbol. Eleven indications were inconsistent in more than one category. The five panelists who attended the meeting reviewed the inconsistencies one by one, considering each category of inconsistency separately. They found the process easy to follow and were unanimous in all their decisions. Correction of the 96 inconsistencies resulted in 100 changes in appropriateness ratings, 79 for PTCA and 21 for CABG. In almost all cases, the appropriateness rating was increased by one level: from U to A (64%), or from I to U (25%); a two-level increase – from I to A – occurred only twice, in classifying the appropriateness of CABG in the chapter on post-myocardial infarction. Only 9% of the changes were in the opposite direction: from A to U (3%), or from U to I (6%). In no case was the appropriateness rating decreased from A to I. There were only 2 instances in which correction of the original inconsistency produced a new inconsistency, and these ratings were also revised (from U to A).

Conclusions: Appropriateness criteria should be reviewed and corrected for clinical consistency before being disseminated. Most changes in appropriateness ratings are likely to be in the upward direction. In spite of concern that new inconsistencies would be produced in the correction process, this was found to occur only rarely.

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