HEART OF THE MATTER

PCI and CABG: Use and Abuse

The difficulty in incorporating guidelines into clinical practice is nowhere more evident than in the decisions made based on coronary angiographic images. The controversy has raged from the minute Dr. F. Mason Sones Jr. first directly imaged the left coronary artery more than 40 years ago, and it has been compounded by the evolution of technological advances in both the angiographic laboratory and the operating room.

BY SIDNEY GOLDSTEIN, M.D.

The coronary angiographers are the major players in determining which revascularization path to take—percutaneous coronary intervention (PCI) or coronary artery bypass graft surgery (CABG)—based on their diagnostic findings. They are forced to make the appropriate decision, based not only on the coronary anatomy, but also on the expertise of their surgical colleagues, the patient's choice and clinical status, and, in large part, the perceptions of their own clinical skills. More recently, their decisions are made under pressure from state and federal supervision, insurers, and their own hospital administrators who often have divergent attitudes toward clinical volumes and costs. Not an easy place to sit when all you wanted to do was to treat heart patients.

The recent publication of information from New York State's cardiac diagnostic catheterization database (Circulation 2010;121:267-75) provides some interesting insight into that decision-making process. The authors reported on 16,142 patients catheterized in 19 hospitals during 2005-2007. Catheterization laboratory cardiologists provided interventional recommendations for 10,333 (64%) of these patients. Study subjects ran the spectrum from asymptomatic angina to non–ST-elevation myocardial infarction. Their recommendations were compared with those of the ACC/AHA guidelines and based solely on angiographic findings. Among the 1,337 patients who had indications for CABG, 712 (53%) were recommended CABG and 455 (34%) were recommended for PCI by the angiographer. Among the 6,051 patients with indications for PCI, 5,660 (94%) were recommended for PCI. In the 1,223 patients in whom no intervention was recommended, 261 (21%) received PCI and 70 (6%) underwent CABG. To no one's surprise, there was a strong bias in the direction of PCI.

In an excellent editorial accompanying the report, Dr. Raymond J. Gibbons of the Mayo Clinic in Rochester, Minn., thoughtfully placed these data in the milieu of the contemporary issues surrounding the use and abuse of coronary angiography and interventions (Circulation 2010;121:194-6). He noted the observed bias toward PCI in the analysis, which is to be expected since there is a "tendency for us to believe in what we do." Considering the data in general, in the closely monitored environment of New York State, the evidence of abuse or overuse was limited to the 27% of patients who went on to PCI or CABG outside of the guidelines. In view of the fact that the analysis did not consider the medical history and concurrent therapy of patients, overuse of interventions appeared to be limited.

Of more concern to Gibbons and this editor is the question of the regional variation in the use of both diagnostic angiography and vascular interventions. In New York State, the performance rate of PCI in different regional health care markets varied between 6.2 and 13.0 interventions per 1,000 Medicare beneficiaries. The New York State rate was similar to that in Rochester, Minn., and Cleveland. However, the highest regional PCI rate in New York State was lower than 69 of the 305 health care markets in the United States. Similar variation was observed in the use of CABG, where the highest rate in New York was less than half the rate observed in McAllen, Tex. These wide variations bespeak the potential for decision making that is well outside guideline recommendations. We have expressed in this column that these are "only" guidelines. However, it behooves all of those who are straying that far outside of the guideline recommendations to be certain of the appropriateness of our decisions.

Most of us are not as much under the microscope as our colleagues in New York State. But as the Centers for Medicare and Medicaid Services agency intrudes more into our practice, the microscope likely will be trained on all of us. Finding the best answers to clinical care is not easy. We all become driven by our own personal experiences, but it is helpful to temper our experiences with those of our colleagues. ■

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