Editor’s Perspective

Improving the Care for Myocardial Infarction

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The field of outcomes research rigorously searches for opportunities to improve the delivery of health care. The general approach is to carefully describe outcomes—including survival, resource utilization (including hospitalization and treatments over time) and health status—and to examine the source of variations in these outcomes. This approach is different from the deductive reasoning used by basic scientists, in which they presume that there is a causal association between a mechanism of disease and test an a priori hypothesis to confirm their theory. Rather, outcomes researchers often follow a more inductive process, whereby outcomes are observed and the presumption is that a myriad of factors contribute, to varying degrees, to the observed outcomes. An example of a good outcomes research study is one that defines a clinically important group of patients, at a distinct point in their care (eg, at the time of an acute myocardial infarction), and systematically assesses a clinically important outcome to describe a broad range of determinants of observed outcomes, including patient-related factors, disease severity, treatment factors, and environmental or structural determinants of outcomes. By identifying important and actionable characteristics associated with outcomes, outcomes researchers can then design interventions to address these characteristics with the goal of improving care and outcomes. The journal Circulation: Cardiovascular Quality and Outcomes is a leading forum for the promotion of the most important science to support the scientific discourse of outcomes research as a foundation for improving the quality of cardiovascular care. Given the myriad of potential determinants of outcomes, the journal seeks to publish studies that broaden our horizons in thinking about how to most effectively and efficiently improve the delivery of care.

In this issue of the journal, the majority of articles examine the care and outcomes of coronary artery disease, particularly acute myocardial infarction (AMI). The treatment of AMI has been a subject of intense focus among outcomes researchers for the past 15 years. Since the publication of Medicare’s original pilot program of the Cardiovascular Cooperative Project in 1995, in which the use of proven therapies, such as reperfusion for STEMI, aspirin, and β-blockers at discharge, in ideal patients was reported in 69%, 77%, and 45% of patients, enormous national efforts to increase adherence to evidence-based treatment through the collection and reporting of performance measures has taken place. Congruent with these efforts, a recent analysis reported that between 1995 and 2006, a marked reduction in 30-day AMI mortality has occurred (from 18.8% to 15.8%, such that of every 33 AMIs in 2006, 1 more patient would have survived as compared with having been treated in 1995). Moreover a substantial decrease in the variation across hospitals was observed, suggesting that better and more consistent care was being applied throughout the country. Leveraging this methodology, Bernheim et al have examined the impact of a regional effort to improve the use of primary reperfusion among STEMI patients in North Carolina. They found that by focusing on the structures and processes of care through a collaborative quality improvement initiative, they were able to provide significant reductions in treatment times across sex, racial, and age groups. This is clearly the goal of such systematic efforts at quality improvement—establishing the infrastructure of emergent care so that sociodemographic disparities are eliminated. The value of such regional programs is further described by the comparative effectiveness study of Concannon et al.

After reperfusion, if applicable, is applied, the next step is to ensure that the range of other evidence-based treatments are also administered. Although marked improvements in the process of care have occurred over the past 15 years, there are still patients who be considered ideal candidates for such treatments that do not get them. Bagnall et al have conducted a thorough investigation as to why physicians and patients may fail to adhere to guideline-recommended treatments. Beyond standard medications, such as aspirin, β-blockers, and angiotensin-converting enzyme inhibitors, coronary revascularization must often be considered. The use of coronary revascularization is often best applied to those at the highest risk for subsequent mortality or who are predicted to have significant angina or impaired quality of life after discharge. Toward that end, Verouden et al have examined patient characteristics associated with 1-year mortality. Because all hospitals are not capable of providing coronary revascularization, Iwahyna et al have examined the patterns and predictors of transfer from hospitals that do not perform
coronary revascularization to those that do. Understanding system factors associated with treatment remains an important and incompletely investigated phenomenon of cardiac care. For example, Chaitman et al. show that in the COURAGE trial of upfront percutaneous coronary intervention versus optimal medical therapy alone, the health care system in which patients are treated has an important and independent association with the use of subsequent revascularization, although not on outcomes. All of these articles focus on the treatment strategies used by the health care system.

Yet, patient characteristics are also known to be important determinants of outcomes. In this vein, the review by Denollet et al. is valuable. This group from the University of Tilberg has pioneered the recognition and study of a psychological profile—depressive symptoms and a repression of the ability to share emotions with others, the so-called Type D personality disorder—that is emerging as a unique and potentially important risk factor in cardiovascular disease. It is noteworthy that patients' psychosocial characteristics have long been known to be associated with outcomes, but our ability to intervene on these conditions have been limited and frustrated our field in our attempts to treat the totality of a patient's conditions, beyond their coronary anatomy, lipids, and platelet reactivity. By gaining a richer understanding of the spectrum of depressive symptoms, we hope to advance our understanding of the mind-heart connection and establish innovative treatments that can address not only patients' psychological state but also improve their cardiovascular outcomes.

Collectively, this issue of the journal illuminates the field of outcomes research in the setting of coronary disease. From demonstrating the potential of structural redesign to eliminate disparities, to illuminating reasons that evidence-based care is not provided, to understanding system-based patterns of care, to reviewing new insights into patient determinants of outcomes, the articles enhance the foundation of outcomes research and exemplify our inductive approach to understanding and enhancing the treatment of patients. Leveraging these insights into future interventions offers the potential to further improve the treatment gains from the last decade to even more substantial benefits in the future.

Disclosures
None.

References


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