Editorial

Optimizing management of patients with coronary artery disease: how do we get there?

Debabrata Mukherjee*

Gill Heart Institute, Division of Cardiovascular Medicine, University of Kentucky, 900 S. Limestone Street, 326 Wethington Building, Lexington, KY 40536-0200, USA

Online publish-ahead-of-print 31 March 2005

This editorial refers to ‘Management and outcome of patients with established coronary artery disease: the Euro Heart Survey on coronary revascularization’† by M.J. Lenzen et al., on page 1169

Cardiovascular disease remains the leading cause of morbidity and mortality globally.1 Despite marked advances in the fields of mechanical and pharmacological therapies for coronary artery disease there continues to remain large gaps in the utilization of these effective therapies. Over the last decade, several pharmacological therapies have been shown to be very effective in reducing morbidity and mortality in patients with cardiovascular diseases. These agents, including antiplatelet agents, statins, beta-blockers, and angiotensin-converting enzyme (ACE) inhibitors or angiotensin receptor blockers, although individually very effective in reducing secondary cardiovascular events are even more effective when used in combination and may have2 incremental benefits in patients with acute coronary syndrome (Figure 1) and in those undergoing vascular interventions.3 However, despite strong and unequivocal benefits of these agents, these effective secondary preventive therapies continue to be underutilized.4

Lenzen et al.5 describe the results of the Euro Heart Survey programme. The Euro Heart Survey on coronary revascularization was conducted in 130 voluntary participating hospitals from 31 ESC member countries with the objective to evaluate clinical practice, adherence to Guidelines, differences in the management and outcome of patients, and to assess to what extent the patients of daily practice are represented in randomized clinical trials. The participating centres were asked to enroll blocks of 40 consecutive patients. The present report discusses consecutive patients undergoing invasive diagnostic or therapeutic catheterization, of which patients with >50% diameter stenoses in at least one major epicardial vessel were asked to participate.5 The authors report several important findings. They report appropriate use of mechanical revascularization in the management of these patients, but considerable deficiencies in the use of GP IIb/IIIa receptor blockers and underuse of ACE-inhibitors and statins. Moreover, post-procedural necrosis markers were measured in only 61% of all percutaneous coronary intervention (PCI) procedures and in one-third of patients undergoing coronary artery bypass surgery (CABG). This is despite evidence that levels of cardiac enzymes after either CABG or PCI are an independent predictor of cardiac mortality and subsequent myocardial infarction and other major adverse events.6

The article by Lenzen et al.5 provides important baseline information on management of patients with coronary artery disease throughout Europe and demonstrate that expensive procedures, such as mechanical revascularization, may be more easily embraced by practicing clinician, because they may translate into higher revenues for institutions and physicians. The report also highlights major deficiencies in utilization of effective pharmacotherapies for these patients. The logical question that arises from the findings of this report is how then can we improve quality of care in patients with coronary artery disease and narrow the existing gap in utilization of effective therapies?

A limitation of this survey was a lack of feedback to participating hospitals and physicians regarding their quality of care and lack of insight regarding significant heterogeneity in practice patterns among the participating hospitals. We have learnt that quality improvement exercises, which promote use of systems that embed guideline knowledge into the care process

© The European Society of Cardiology 2005. All rights reserved. For Permissions, please e-mail: journals.permissions@oupjournals.org
itself and provide feedback to physicians, are relatively more successful.\(^7\) In one such improvement initiative, the Guidelines Applied in Practice (GAP) project in the state of Michigan, one physician and one nurse leader from outside the hospital system from the Southeast Michigan Quality Forum were assigned to serve as leaders.\(^8\) They assisted in the development of quality improvement plans, tool kit customization, and project implementation. The project demonstrated quality improvement among a variety of institutions, patients, and caregivers.\(^8\) An important component of the GAP tools included providing patients with education and empowerment and to help them better understand their disease and the long-term goals of its treatment, including lifestyle strategies. There was also an emphasis on standard orders and discharge tools which reminded caregivers to consider evidence-based therapies in every patient and on creation of a system which includes patients, nurses, and physicians in a review of care priorities and provide continuous feedback to them promote improvement in quality of care.

Any intervention aiming to modify physician behaviour must be effective to support the adoption of changes into clinical practice.\(^7\) A systematic approach, particularly targeting use of quality improvement tools, involving both caregivers and patients, and targeting reimbursement to appropriate therapy is more likely to be successful in improving adherence to guidelines and performance measures.\(^7,8\)

The appropriate use of evidence-based therapy has significant health outcome and policy implications. Peterson \textit{et al.}\(^9\) demonstrated that in-hospital myocardial infarction mortality rates are 40% lower at hospitals that adhere to published guidelines than they are at those that inconsistently or rarely provide recommended therapy. In the future, substantial global funding and support for quality measurement and improvement initiatives will be needed to implement the accumulating evidence of effective medical therapies into routine clinical practice and translate efficacy into effectiveness.\(^10\) Patients with established coronary artery disease represent an important cohort in which secondary vascular disease prevention is likely to be particularly useful and cost-effective. Cardiovascular specialists have an opportunity not only to provide high-quality and appropriate coronary interventions, but also to seize the peri-procedural moment in aggressively treating the underlying atherosclerotic process through lifestyle modifications and effective pharmacological therapies. The attention to these disease management opportunities is more likely to affect both quality and quantity of life rather than the revascularization procedure itself.

References


![Figure 1](image-url) Effect of combined use of evidence-based medical therapies on 6 month mortality in patients with acute coronary syndromes. Composite appropriateness levels (I–IV) are compared with level 0 (non use of any of the indicated medications) and shows a gradient of survival benefit in this cohort with use of higher number of evidence-based medications. Evidence-based therapies for this analysis included anti-platelet agents, beta-blockers, ACE-inhibitors, and lipid-lowering therapy. (Adapted with permission from Mukherjee \textit{et al.} \(^9\))


