

Introduction

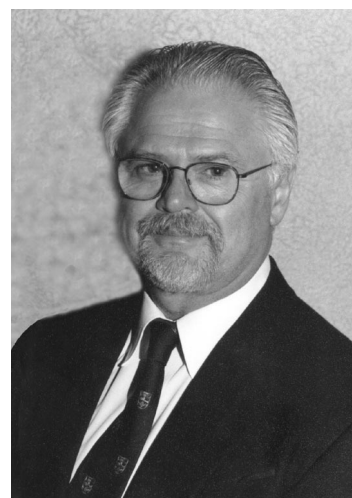
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The purpose of this supplement to *The American Journal of Cardiology* is to encourage a reevaluation of optimal management of patients who are being considered for cardiac catheterization. In his review, Dr. Spencer B. King III, discusses the technical advances that have occurred and outlines the basic issues that are explored in greater depth in the accompanying articles. Most percutaneous interventional procedures in the United States involve balloon angioplasty with stenting and adjunctive antiplatelet therapy. This technique is highly successful in relieving symptoms and improving the ischemic syndrome caused by atherosclerotic stenoses. However, we have been less successful in preventing the occurrence of late cardiovascular events after revascularization. This is because atherosclerosis is a diffuse disease in conduit arteries, and it requires not just a single intervention but a continuum of care involving aggressive secondary prevention measures that we now know can save lives (namely, aggressively addressing hypercholesterolemia and other risk factors).

Dr. James L. Orford and colleagues expand on this issue in a review that compares and contrasts the pathobiology of atherosclerotic disease with that of the intervened arterial segment. These processes involve different mediators, timelines, and management strategies. Importantly, atherosclerosis is a diffuse, chronic, low-grade inflammatory response to oxidized low-density lipoprotein (LDL) and other risk factors. In contrast, the intervened arterial segment exhibits a characteristic response to local injury and/or a foreign body (the stent) that is limited in time, variable in extent, and frequently lesion specific. Dr. Steven E. Nissen presents data from intravascular ultrasound (IVUS) studies demonstrating in life what we have learned from pathologists for >20 years. He shows that an obstructive lesion is a marker of extensive diffuse disease, with lesions at all different levels of development scattered throughout the coronary tree. It is becoming clear from this IVUS work that angiography markedly underestimates the burden of athero-

sclerotic disease. The disease begins earlier than was once thought and the existence of multiple plaques is the rule, not the exception. The accumulated data from IVUS, pathology, and cell biology studies have also clarified a conundrum that has long puzzled cardiologists: myocardial infarction frequently evolves from plaques that appear only moderately obstructive on the angiograms. In fact, these plaques are large and only appear small because remodeling has preserved the luminal area.

Thus, the continuum of care encompasses 2 goals: (1) to treat the atherosclerotic lesions that are causing angina and the ischemic syndrome and (2) to treat the diffuse disease that conceals present and future vulnerable plaques. Dr. Jeffrey J. Popma and colleagues approach the issue from the perspective of interventional cardiology, and Dr. W. Virgil Brown from that of preventive cardiology. In particular, LDL cholesterol is a key mediator in atherosclerotic plaque development. Lipid lowering effectively treats plaque in all stages of development, reducing disease progression, preventing events, and prolonging survival. Why is it true today that many patients at risk are either not receiving lipid-lowering therapy or are not achieving their target levels? We have every reason to believe that the prompt relief of angina and ischemia by



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percutaneous coronary intervention (PCI) followed by the significant survival benefits of lipid lowering (with control of other risk factors) will be a highly effective strategy for our patients. The interventional cardiologist is in a key position to establish the scope of a management plan and send the appropriate signals to the patients, their families, and their primary care physicians.

In conclusion, we hope that the data and ideas

expressed in this supplement prompt a new approach to the patient with coronary artery disease. Clearly it is time to “ACT” as defined by:

- Awareness of opportunities to improve outcomes
- Continuum of care for early and long-term benefits
- Treat both the offending stenosis (PCI) and the diffuse disease (aggressive LDL lowering)