Cholesterol Management and Managed Care

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Overwhelming evidence demonstrates that the treatment of cholesterol disorders slows progression of atherosclerosis[1,2] and reduces the risk of future cardiovascular events and mortality by 30% to 50%.[1-4] The most benefit is derived by patients with cardiovascular disease (CVD), multiple risk factors, or high-risk cholesterol disorders, while those with no known CVD or only one risk factor benefit less owing to lower absolute risk.[1-5] In studies of patients with CVD, for example, cholesterol treatment can result in approximately 20 fewer events for every 100 patients treated over a 5-year period.[4] Patient subgroups such as women and older persons benefit as much as, or more than, other patient groups in these cholesterol studies.[1,4]

Based on this evidence, there is significant potential for practices and health care organizations to improve the health of their patients and reduce health care costs through appropriate cholesterol management.[3,4,6,7] Cost-effectiveness studies demonstrate that cholesterol management is especially cost-effective for patients with known CVD because of their significant risk of recurrent events and greater absolute event reduction with more aggressive treatment.[6,7] Recent studies point out, however, that physicians (especially family physicians) are still not adequately treating patients who could benefit from cholesterol treatment.

National guidelines on cholesterol management, which are now clearly supported by clinical trials, need to become standards of care in our practices.[5] A reduction of low-density lipoprotein cholesterol (LDL) to less than 100 mg/dL is recommended for patients with CVD who have LDL levels greater than 130 mg/dL despite a trial period of lifestyle changes. In persons at high risk for CVD (with two or more risk factors and an LDL level greater than 160 mg/dL after lifestyle changes), pharmacological therapy is recommended to reduce the LDL level to less than 130 mg/dL.[5] Recent studies support treatment of abnormal triglyceride and high-density lipoprotein (HDL) levels, in addition to LDL levels; these findings emphasize the importance of prescribing specific therapy based on the specific cholesterol disorder.[9-11]

There is a significant potential to improve medical care with problem-specific practice evaluations and the application of guidelines in practice. One useful strategy is to use the databases of managed care and other organizations to evaluate the quality of patient care. The article by O'Connor et al[12] in this issue of the *Journal* provides a valuable example of the use of managed care databases to evaluate health care practice. The authors reviewed data on patients from 19 different practices and found that the providers appeared to make appropriate initial medication choices based on lipid levels and other patient characteristics; they also found, however, that many patients did not receive follow-up laboratory testing to determine treatment effectiveness and safety. The type of database and analysis presented by O'Connor and colleagues has the potential to yield even more information regarding the provision and quality of care and its cost-effectiveness. From their study, it is obvious how providers and organizations can benefit by collecting practice data to address the management of common medical problems such as cholesterol treatment. Their study also demonstrates the importance of developing methods to monitor patient treatment and follow-up.

The O'Connor study is limited, however, by its retrospective design and patient selection, and cannot provide a true comparison of the treatments prescribed.[12] In many cases, the effectivenss of the agents prescribed could not be evaluated because of the lack of follow-up, and the reasons for discontinuing therapy in many patients were not often documented. It is important to understand that this type of analysis cannot be used to support substituting one medication for another in practice, as the agents studied were chosen independently by the physicians based on different patient characteristics (eg, diabetes, prior CVD, level of LDL) and the patients were not randomized.

Cholesterol medication choices need to be based on prospective controlled trials that directly compare agents prescribed for randomized patients.

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Currently available medications for cholesterol treatment are pharmacologically distinct and must be individualized based on patient characteristics, the specific cholesterol disorder, and the treatment goals.[9,10] Cholesterol medications, including the two medications evaluated in the O'Connor study, have different effects on individual lipoprotein classes and cholesterol disorders.[9,10] The HMG-Co reductase inhibitors, including lovastatin, can reduce LDL levels more than any other class of medication, but they are not as potent as niacin for triglyceride or HDL levels. Niacin is highly effective for elevated triglyceride or low HDL levels even at low doses (200 to 500 mg twice daily), but niacin generally does not lower LDL values to a significant degree until high doses are used.[10] The fibric acids are primarily effective for treating those patients with high triglyceride levels, while the bile acid sequestrant's effectiveness is primarily limited to LDL reduction. These important pharmacologic differences of the various medications limit the ability of organizational formularies to insist that particular medications be tried first in any or all patients with cholesterol disorders.

Medication recommendations should be based on therapeutic effectiveness and cost-effectiveness. It is important to understand that cost-effectiveness not only is based on costs, but also depends on medication potency, side effects, and safety profile, and whether the medicine is used appropriately.[6] Therefore, in appropriate patients, more expensive medications may be cost-effective. The HMG-CoA reductase inhibitors, though expensive at higher doses, can be cost-effective, as they are highly potent for LDL-cholesterol reduction and have minimal side effects.[6,7] Niacin, while highly effective and cost-effective when used appropriately (such as in the patient with high triglyceride and low HDL levels), has a high rate of bothersome side effects, and occasional serious sequelae, which results in higher discontinuation rates, more monitoring, and potentially higher costs.[6,10,12]

The availability of computerized data in health care organizations enhances the ability to evaluate and improve the quality of care provided to patients. O'Connor and colleagues[12] provide a fine example of how research, using a database evaluation of the medications prescribed for a particular condition, can provide data to evaluate practice. Case-management programs using computerized databases, with nurse case managers to provide and monitor preventive services, can significantly improve medical care for patients with high-risk, chronic medical conditions (eg, CVD, congestive heart failure, diabetes).[13] The potential for cholesterol therapy to reduce morbidity, mortality, and costs for those patients with CVD, multiple CVD risk factors, and genetic cholesterol disorders should make cholesterol screening and treatment a high priority for organizations developing quality improvement and case-management programs.[1-7]

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