

Cholesterol Management—Are Guidelines Effective?

Patrick McBride, MD, MPH, and Gail Underbakke, RD, MS
Madison, Wisconsin

Clinical guidelines developed by government agencies and health organizations have become increasingly popular. These guidelines are intended to improve health care by suggesting appropriate management of specific clinical problems, and by providing indications for clinical procedures.¹ The Report of the National Cholesterol Education Program (NCEP) Expert Panel on Detection, Evaluation and Treatment of High Blood Cholesterol in Adults was published in 1988 to provide clinical guidelines for high blood cholesterol.² These guidelines have had a significant impact on physicians' attitudes concerning cholesterol.^{3,4} A 1990 survey of practicing physicians, published by the National Heart, Lung, and Blood Institute (NHLBI), indicated a remarkable shift in attitudes and reported practices regarding the detection and treatment of high blood cholesterol compared with responses given on similar surveys in 1983 and 1986.⁵

The dramatic shifts in physicians' attitudes and self-reported practices do not necessarily mean changes in practice behavior, however. Positive attitudes do not predict appropriate recommendations for dietary or pharmacologic therapy, and do not guarantee quality interventions.⁶⁻⁹ The NHLBI survey indicated that physicians report low utilization of follow-up reminder systems, dietary assessments, and referral to office staff or dietitians for patient counseling.³ These are important elements of an organized approach to cholesterol management.

Why is there a gap between attitudes and practice? There are many barriers to implementation of preventive practices in primary care. Schedules are primarily driven by acute care demands, and practices frequently lack the organizational systems necessary for routine preventive care. Physicians cite barriers such as time, lack of reimbursement, patient reluctance to change behaviors, variable access to community resources, and limitations in

skills.¹⁰ In addition, physicians continue to report a lack of confidence in their ability to counsel patients for dietary or other behavioral change and indicate a need for training to manage hypercholesterolemia.^{3,11}

In this issue of the Journal, two articles evaluate aspects of management of high blood cholesterol in primary care.^{12,13} Kelly et al report on a multicenter survey to assess attitudes and self-reported practices of resident physicians. Using an innovative method to obtain a high response rate (90%), these investigators report a very positive attitude toward the recognition of cholesterol as a risk factor, ranking it in importance with hypertension. These findings are consistent with data from surveys of physicians in private practice³ and indicate improvement in resident attitudes compared with earlier studies.^{6,14} Residents responding to the Kelly survey found patient reluctance to change to be a less significant obstacle to intervention than did practicing physicians.

A disturbing finding in the study by Kelly and co-workers is the continued lack of resident physicians' confidence in their skills in counseling patients concerning behavior change, which is consistent with surveys of practicing physicians.^{3,11} The role of physicians in patient behavior change is important, as evidenced by studies that find that patients identify their physician as their major source of health information, indicate they would improve their lifestyle if their physician told them it was important to their health, and expect physicians to provide advice about health behaviors including cholesterol reduction.^{3,15} Behavior change counseling is difficult, but practical methods, resources, and educational curricula are available to train physicians, thereby increasing their confidence in their ability and encouraging more frequent and effective patient counseling.¹⁶⁻¹⁸

Diet is recognized as a critical element in the treatment of hypercholesterolemia, but an effective diet modification program can be difficult to implement in primary care. Bae et al¹³ studied the implementation of the American Heart Association (AHA) Step One Diet recommended for treatment of high blood cholesterol. We

From the Department of Family Medicine and Practice, Department of Medicine-Cardiology, and Preventive Cardiology Program, University of Wisconsin-Madison. Requests for reprints should be addressed to Patrick McBride, MD, 777 South Mills St, Madison, WI 53715.

agree with the authors that the multiple limitations of their study prevent a conclusion on the diet's effectiveness. The patients studied knew their cholesterol levels were elevated before recruitment. Assessment of baseline diets found that the average participant reported consuming 31.6% of calories from fat and 10.6% from saturated fat, only minimally higher than the 30% and 10% recommended for the AHA Step One Diet. Participants' baseline cholesterol intake averaged 232 mg/d, well below the 300 mg/d AHA diet recommendation. Despite diets that were nearly consistent with the study diet before entry, the majority of participants lowered their cholesterol levels further after the brief intervention. In addition, those with the highest fat intake and highest cholesterol levels were the most likely to show improvement.

Additional limitations of the Bae et al study include the lack of a control group and the failure to separate participants by metabolic lipoprotein patterns.¹⁹ Previous studies of a diet containing 30% of calories as fat and 10% as saturated fat have demonstrated the effectiveness of the recommended diet, and the Bae study does not disprove these conclusions.^{20,21} The use of group educational sessions, a team approach involving physicians and dietitians, follow-up reinforcement, and careful data measurements are strengths of the Bae et al study,¹³ which provides an example for future studies on primary care nutritional interventions.

The Bae study provides strong support for the need to assess dietary knowledge and usual eating habits before making dietary recommendations. It is apparent that many patients will place themselves on a low-fat diet before it is suggested by their physician. Without a dietary assessment, nutritional recommendations cannot be personalized and may not be appropriate.¹⁶ A survey of family physicians found that 96% believed that nutritional counseling was important, but only 27% of physicians reported taking dietary histories.²² Physicians who took dietary histories were more likely to counsel patients about nutrition.²² Simple diet assessment tools and methods, in conjunction with training for effective use, have the potential to improve the nutritional care provided to patients.

Although clinical studies demonstrate the benefits of dietary modification for those at risk of disease, some question the benefit of these changes for the population as a whole. A recent article published in the *Journal of the American Medical Association*²³ suggests that the average individual will gain only a few months of life by switching to a low-fat, low-cholesterol diet. This conclusion is similar to findings from another highly publicized, and criticized, mathematical-model study published several years ago.²⁴

These models, which suggest little potential benefit from dietary change, are based on assumptions that may not be accurate; we believe that their results have been misinterpreted and misused. Browner et al estimate that dietary change would gain for the United States 60 million additional years of life, which is a powerful effect for a population intervention. Dividing the potential number of years gained by the total adult population (to produce the few months' increase in length of life) attempts to apply population estimates to individuals and does not account for differential responses based on current diet, risk, or personal lipoprotein patterns. These estimates do not account for the other potential benefits of cholesterol reduction, including reduced or delayed morbidity, increase in years of productive life, and decreased health care costs. The conclusions from these models are in direct contrast to clinical trial and epidemiologic evidence that every 1% reduction in serum cholesterol reduces a hypercholesterolemic individual's risk by 2% to 3%.²⁵ Speculation and differences of opinion regarding consensus guidelines will continue until definitive studies are done, and even then differences of opinion will continue. What is a physician to do?

Physicians are responsible for determining patients' overall risk and recommending treatment for those at high risk. Ample evidence is available that dietary modification will be of benefit to individuals at high risk of cardiovascular disease, and will reduce several other health risks.^{25,26} There is much support for the recommendation that physicians should encourage a nutritional pattern emphasizing variety; moderate intake of total fat, saturated fat, and cholesterol; and increased intake of fiber.^{25,26} After all, over two thirds of physicians say they are following such a pattern themselves!⁵

Cardiovascular disease remains the major cause of death and disability in the United States for both men and women, accounting for nearly as many deaths as all other causes combined.²⁷ This is despite an impressive decline over the past two decades.²⁷ Of special concern, over 25% of cardiovascular death and disability occurs in persons younger than 65 years of age, accounting for over 1.5 million years of life lost before 65 years of age.²⁷ Research in the management of high blood cholesterol must continue to be combined with research on effective and efficient methods for behavior change to provide effective medical care guidelines for persons at risk and dietary recommendations for the general population. Medical educators must develop and disseminate methods for providing physicians with skills in counseling patients about behavior change and nutrition, and provide methods to implement such strategies in practice.

Given the many barriers to providing preventive services in primary care, the type of research published in

this issue of the Journal is important to define physician educational needs and develop clinical management strategies for busy primary care practices. Research is needed on methods to efficiently deliver preventive services within the "real world" practice environment. More than clinical guidelines will be needed to assist physicians if actual practice behavior and delivery of preventive services, and not just physicians' attitudes, are to change.

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