VIEWPOINT

Patient-Centered and Practical Application of New High Cholesterol Guidelines to Prevent Cardiovascular Disease

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In 2013, the American College of Cardiology and the American Heart Association (ACC/AHA) published new guidelines for assessing cardiovascular disease (CVD) risk[1] and for treatment of blood cholesterol to reduce CVD.[2] These new guidelines replaced the Adult Treatment Panel III (ATP III) guidelines for the detection, evaluation, and treatment of high blood cholesterol[3] that guided clinical practice for more than a decade. The new guidelines divert focus from lowering low-density lipoprotein (LDL) cholesterol levels to treating CVD risk and therefore are no longer pure cholesterol guidelines like the ATP III predecessor. The new guidelines also discourage the prescription of lipid-lowering medications, such as ezetimibe or niacin, that do not have proven effect on reducing CVD risk. These changes represent a major shift in preventive cardiology.

To apply the ACC/AHA guidelines in a patient-centered and practical perspective, 3 cases illustrate the evidence-based approach espoused by the new guidelines, with 1 important modification. The guidelines set an arbitrary 10-year CVD risk threshold of 7.5% to initiate statins; however, this threshold represents a value judgment about how much absolute CVD risk reduction justifies the potential harms, costs, and inconveniences of taking statin medications.

> For policy makers, the target for performance measures is not the percentage of patients with at least 7.5% CVD risk who are prescribed statins, but the proportion of eligible patients who participate in shared decision making about statin use.

This risk threshold—perhaps a public health imperative—appears to have been perhaps erroneously presented as a technical decision, ie, one for which there is a single right answer for all patients regardless of individual patient preferences, values, and context. Conversely, a single risk threshold, stated in terms of 10-year risk or in terms of LDL cholesterol concentrations, cannot reflect the range of preferences of informed patients. In other words, all patients may not find that a risk threshold of 7.5% is justified for taking statins and the threshold may vary markedly on the basis of individual patient preferences, values, and context. Clinicians who consider application of the guidelines should determine 10-year CVD risk for each patient and engage the patient in shared decision making using evidence-based approaches.[4]

The new ACC/AHA guidelines therefore create an opportunity to advance patient-centered care and shared decision making. Rather than routinely prescribing statins to the millions of adults who have a 10-year CVD risk of at least 7.5%, the realization of this opportunity requires clinicians to engage in deliberation with individual patients about the potential benefits (eg, prevention of cardiovascular events), potential harms (eg, myalgia), and burdens (eg, daily administration and out-of-pocket cost) of statin use. The following cases will demonstrate this patient-centered approach to the practical application of these guidelines.

Patient 1

A 65-year-old woman with no CVD risk factors has average blood pressure readings of 135/80 mm Hg, an LDL cholesterol level of 200 mg/dL, high-density lipoprotein (HDL) cholesterol of 30 mg/dL, and a total cholesterol level of 300 mg/dL, which did not change much with diet. She has been unable to tolerate atorvastatin because of gastrointestinal distress and muscle discomfort and returns to discuss treatment options with her physician. Following ATP III guidelines, the physician would prescribe rosuvastatin to reduce her LDL cholesterol level to lower than 160 mg/dL. The new ACC/AHA guidelines give a class I recommendation to use moderate- to high-intensity statin therapy in persons with LDL levels of 190 mg/dL or greater.

Rather than merely prescribe statins for this patient, the physician used a decision aid[5] to discuss the value of reducing 10-year risk from 10% to 6% in the context of the patient's known issues with statins (**Video**). This patient considered her options and chose not to use statin therapy, judging that neither aspirin nor statins would provide her with sufficient benefits to justify their use. It is important to recognize, as should the physician, that another patient may have chosen to try an alternative statin or to use aspirin alone. That is, once the discussion is changed from blood cholesterol concentrations (as in ATP III) to CVD risk, patients, considering their own preferences and values, can meaningfully engage in the conversation to decide whether to take a statin medication.

Patient 2

The second patient is a 45-year-old woman who is moderately obese and has type 2 diabetes (hemoglobin A_{1c}, 6.7%). According to ATP III guidelines, the patient's diabetes should be considered a coronary disease equivalent and she should use statins to reduce her LDL cholesterol level (109 mg/dL) to less than 100 mg/dL. Unbeknownst to the patient, the proportion of her physician's patients with diabetes with an LDL cholesterol level of less than 100 mg/dL is publicly reported and her physician is held accountable to this performance measure. The patient leaves the consultation with a statin prescription. She is not sure of the magnitude of benefit from taking statins or whether she wants to start this form of treatment.

Under the new ACC/AHA guidelines, moderate- to high-intensity statin therapy for primary prevention is recommended (class I recommendation) for persons aged 40 to 75 years with diabetes. Further, this patient has a 10-year CVD event risk (blood pressure 135/85 mm Hg, HDL 40 mg/dL, total cholesterol 200 mg/dL) of 3%. By using a decision aid,[5] the patient learns that statins can reduce this risk to 2%. From her perspective, she believes that her CVD event risk is low and that the benefits also seem insufficient to justify taking statins for the next 10 years. The patient decides to forgo statin therapy and to focus on changing her lifestyle. If the ACC/AHA guidelines were to be translated into performance measures for accountability and reimbursement, this patient's physician would be placed in a conflicted situation—whether or not to follow the informed preferences of his patient and face the consequences of poor performance on publicly reported measures.

Patient 3

A 61-year-old man has several friends who experienced devastating myocardial infarctions or strokes. This patient is now motivated to rigorously adhere to a healthy lifestyle. At age 61, he walks daily and attends aerobics classes 3 times per week. He consults with his physician asking if he should begin statin therapy. He has not been prescribed statins because he has no CVD risk factors and his LDL cholesterol levels have ranged from 90 to 110 mg/dL in the last year (HDL cholesterol, 60 mg/dL; and total cholesterol, 200 mg/dL).

Under the new ACC/AHA guidelines, moderate- to high-intensity statin therapy for primary prevention is recommended (class I recommendation) for persons aged 40 to 75 years with LDL cholesterol levels between 70 and 189 mg/dL and a 7.5% or higher estimated 10-year risk of CVD. Using the decision aid,[5] this patient's physician estimated his risk at 7%, below the threshold, and explained how it could be reduced to 5% with daily statin use. After reviewing the potential adverse consequences, the patient opted to begin taking statin medications. He stated that by doing so, he feels he is doing everything possible to avoid a devastating cardiovascular event and loss of independence.

Implications for Policy and Practice

These 3 cases demonstrate practical implications of the new CVD risk guidelines for policy makers, clinicians, and patients. The value of these new guidelines is not in simply estimating 10-year CVD event risk and routinely prescribing statins for those with risk of 7.5% or greater. Rather, the principal value will result from realizing the opportunity to advance patient-centered care and shared decision making, enabling a new conversation between clinicians and patients by which patients make an informed choice about whether to take a statin medication for the next 10 years.[5] For policy makers, the target for performance measures is not the percentage of patients with at least 7.5% CVD risk who are prescribed statins, but the proportion of eligible patients who participate in shared decision making about statin use.

In conclusion, translating the new ACC/AHA guidelines into patient-centered practice requires the implementation of 10-year CVD risk calculators; shared decision making tools or decision aids to convey this risk information as well as the pros and cons of statins and other evidence-based interventions to reduce this risk and to engage patients in collaborative discussion; and measures that reward efforts to engage patients in shared decision making.

ARTICLE INFORMATION

Conflict of Interest Disclosures: All authors have completed and submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest and none were reported.

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