The News on NCEP III

Reviewed by Georgia S. Willie, MD

STUDY

Executive summary of the third report of The National Cholesterol Education Program (NCEP) Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III). *JAMA* 285:2486–2497, 2001

SUMMARY

Background. The National Cholesterol Education Program (NCEP) has developed new guidelines for evaluating risk for cardiac disease. These new guidelines utilize the Framingham Point Score in determining risk assessment of new cardiac events within a 10-year period.

New Features. Previously, diabetes was considered to be one of several risk factors in the development of cardiac disease, including hypertension and family history of early cardiac disease. Based on new data, the Expert Panel has now recommended that the presence of diabetes be considered equivalent to the presence of established cardiac disease. The panel has also placed a new emphasis on identification of the metabolic syndrome and its management through early lifestyle modification interventions.

Conclusion. Diabetes is no longer considered to be a major risk factor, but rather is considered a cardiac disease equivalent. This should lead to more aggressive preventive measures among diabetic patients and, ultimately, to lower cardiovascular morbidity and mortality among these patients. The metabolic syndrome is now a secondary target of risk-reduction therapy.

COMMENTARY

History of Diabetes and Cardiovascular Disease

Although the direct linkage between glycemic control and atherosclerotic disease has not been established, diabetes has long been associated with a marked increase in risk for coronary heart disease. Recent surveys have attributed 75% of the morbidity associated with diabetes to cardiovascular disease. Haffner and colleagues[1] found that patients with type 2 diabetes who have not had a myocardial infarction (MI) have a risk of MI similar to that among nondiabetic patients who have had a previous MI. Other investigators have reported similar findings. For example, Herlitz and colleagues[2] reported that among patients presenting with symptoms of acute MI, those with diabetes had a 1-year mortality rate more than twice as high as that of nondiabetic patients (25 vs. 10%, respectively).

New Features of the NCEP III

Lipid and Lipoprotein Classification

In the NCEP III's Adult Treatment Panel (ATP III), the continued primary focus is on identifying and lowering elevated LDL cholesterol levels as a means of either treatment for or prevention of cardiovascular heart disease (CHD). A fasting lipid profile, which includes total cholesterol, HDL, LDL, and triglyceride measurement, as opposed to a screening profile (i.e., total cholesterol and HDL measurement only), should be obtained in all adults 20 years of age or older.

People with established CHD should have an LDL level <100 mg/dl. A high LDL level (>160 mg/dl) is a definite indication for lipid-lowering therapy, especially in people who have failed to lower their LDL levels through dietary therapy alone. Although low HDL cholesterol is still regarded a strong independent predictor of CHD, there are insufficient data regarding a specific goal of therapy for HDL. The ATP III defines low HDL cholesterol as a level <40 mg/dl, which has been revised from a level of <35 mg/dl in the ATP II.

Focus on Framingham

Expanding on the goals of ATP II, the ATP III places more emphasis on primary prevention in people with multiple risk factors, using the Framingham Point Score projections over 10 years. The risk factors that are used in this scoring method include total cholesterol, HDL cholesterol (<40 mg/dl), systolic blood pressure, use of antihypertension medications, and cigarette smoking. The Framingham scoring system divides men and women with these characteristics into three categories of risk for having a CHD event within the next 10 years: >20% (people with multiple risk factors), 10–20% (people with 2 risk factors), and <10% (people with 0–1 risk factors). ATP III uses these calculations to define the core risk status and to set initial goals of LDL-lowering therapy.

The category with the highest risk consists of CHD and CHD risk equivalents (i.e., peripheral vascular disease, symptomatic carotid disease). Under the

Framingham scoring system, CHD risk equivalents carry a risk for a major coronary event equal to that of established CHD, or >20%/10 years.

Risk Groups

Diabetes

Diabetes is now considered a CHD risk equivalent because of the documented high risk of new cardiovascular morbidity within this patient population. Individuals with diabetes who experience an MI have been shown to have unusually high mortality rates either immediately or over the long term. The impact of diabetes on recurrent MI and fatal coronary heart disease was examined in the Framingham Study, which found that risk of fatal coronary heart disease was higher in the presence of diabetes and that the presence of diabetes doubled the risk of recurrent MI in women.[3,4]

Equally important is the high prevalence of diabetic dyslipidemia in the type 2 diabetic population. The presence of elevated triglycerides and low HDL is well documented to be atherogenic in these patients. Therefore, diabetic individuals now require a more intensive prevention strategy aiming for the lowest LDL cholesterol goal (<100 mg/dl). In addition, people with diabetes who have LDL levels >130 mg/dl will benefit from initiation of lipid-lowering therapy in conjunction with therapeutic lifestyle changes to achieve this lower LDL goal.

Metabolic Syndrome

ATP III also targets individuals with the metabolic syndrome, which is composed of lipid and nonlipid risk factors including abdominal obesity, atherogenic dyslipidemia (triglycerides >150 mg/dl, low HDL), insulin resistance (with or without glucose intolerance), and elevated blood pressure. This constellation of factors, in aggregate, enhances the risk for CHD at any LDL cholesterol level. Therefore, the metabolic syndrome is now recognized as a secondary target for risk-reduction therapy.

This therapy should involve a two-pronged approach. The first strategy is to increase physical activity and reduce excess weight. Weight reduction is proven to enhance LDL-lowering efforts, thus reducing the risk factors of the metabolic syndrome. The second strategy is to treat the associated dyslipidemic risk factors. Clinical trials have shown triglycerides to be an independent CHD risk factor. Elevated triglyceride levels are common among patients with the metabolic syndrome. Thus, the ATP III has set defined normal triglyceride levels as <150 mg/dl; a level >200 mg/dl will be considered a secondary target for therapy after implementing LDL reduction.

Summary of ATP III Goals

- The main objective of the ATP III guidelines is to reduce the risk of new CHD events through intense lipid-lowering and lifestyle modifications. For people with CHD or diabetes, aggressive lipid-lowering therapy has the greatest impact on reducing morbidity and mortality rates.
- Risk assessment in patients with and without clinical manifestations of CHD should be evaluated with the use a complete fasting lipid panel and the Framingham Point Score projections for 10-year absolute CHD risk.
- For individuals with established CHD, diabetes, or other CHD risk equivalents, the optimal LDL level is 100 mg/dl or less to be achieved through lipid-lowering medications and lifestyle modification. Individuals with two or more cardiac risk factors benefit from an LDL goal of <130 mg/dl.
- People with the metabolic syndrome will greatly benefit from early recognition in the outpatient setting and from initiation of intensive therapy focusing on dyslipidemia and on nonlipid risk factors after correction of elevated LDL levels.

REFERENCES

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