Challenging Cholesterol

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ABSTRACT

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Background: Obesity, particularly abdominal adiposity, is associated with an increased prevalence of diabetes, hypertension and other features of the metabolic syndrome. Prevalence of Type 2 diabetes, a major risk factor for coronary artery disease, is escalating in epidemic proportions.

Objectives: To find out the risk factors of Coronary Heart Disease

Methodology: Research of hypercholesterolemia indicates that elevated LDL cholesterol is a major cause of Coronary heart disease (CHD). Persons with CHD or CHD risk equivalents have the lowest LDL cholesterol goal (<100 mg/dL).

Results: The LDL cholesterol goal for persons with multiple (2+) risk factors is <130 mg/dL. Persons having 0-1 risk factor have a 10-year risk <10%. Their LDL cholesterol goal is <160 mg/dL.

Keywords: Coronary Heart Disease Risk Factors, Cholesterol Lowering Goal, Lipid measurement

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Challenges in our country, include the rising prevalence of obesity, diabetes mellitus and Coronary heart disease(CHD). Obesity, particularly abdominal adiposity, is associated with an increased prevalence of diabetes, hypertension and other features of the metabolic syndrome. Prevalence of Type 2 diabetes, a major risk factor for coronary artery disease, is escalating in epidemic proportions. Research of hypercholesterolemia indicates that elevated LDL cholesterol is a major cause of CHD. Recent clinical trials robustly show that LDL-lowering therapy reduces risk for CHD.[1] The findings from several important clinical trials prove this, including those from the Myocardial Ischemia Reduction with Aggressive Cholesterol Lowering (MIRACL) Study, the Veterans Affairs High-Density Lipoprotein Intervention Trial (VA-HIT) and the Heart Protection Study (HPS).[2]

Various cholesterol management guidelines are available today.[1,2] By focusing recommendations on people with the highest risk of coronary heart disease, the Canadian, US, and European societies guidelines could improve outcome in various population.[3] The NCEP periodically produces ATP clinical updates. The most recent one calls for more intensive LDL-lowering therapy. It recommends a complete lipoprotein profile (total cholesterol, LDL cholesterol, HDL cholesterol, and triglycerides) as the preferred initial test, rather than screening for total cholesterol and HDL alone. It also identifies LDL Cholesterol as the primary target of therapy.

The major risk factors that modify LDL Goals include Cigarette smoking, Hypertension, Low HDL cholesterol (<40 mg/dL), Family history of premature CHD (CHD in male first degree relative <55 years; CHD in female first degree relative <65 years) and age (men 45 years; women 55 years). Diabetes is regarded as a CHD risk equivalent. HDL cholesterol >60 mg/dL counts as a "negative" risk factor; its presence removes one risk factor from the total count.

The category of highest risk consists of CHD and CHD risk equivalents. They carry a risk for major coronary events >20% per 10 years (i.e., more than 20 of 100 such individuals will develop CHD or have a recurrent CHD event within 10 years). Persons with CHD or CHD risk equivalents have the lowest LDL cholesterol goal (<100 mg/dL). The LDL cholesterol goal for persons with multiple (2+) risk factors is <130 mg/dL. The third category consists of persons having 0-1 risk factor have a 10-year risk <10%. Their LDL cholesterol goal is <160 mg/dL.

Secondary Prevention with LDL-lowering therapy is also very important. Recent clinical trials demonstrate that LDL-lowering therapy reduces total mortality, coronary mortality, major coronary events, coronary artery procedures, and stroke in persons with established

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CHD. LDL cholesterol level of <100 mg/dL is optimal. When persons are hospitalized for acute coronary syndromes or coronary procedures, lipid measures should be taken on admission or within 24 hours. These values can guide the physician on initiation of LDL-lowering therapy before or at discharge. Adjustment of therapy may be needed after 12 weeks.

ATP III recommends a multifaceted lifestyle approach to reduce risk for CHD. This approach is designated therapeutic lifestyle changes (TLC). Its essential features are reduced intake of saturated fats (<7% of total calories) and cholesterol (<200 mg per day), therapeutic options for enhancing LDL lowering such as plant stanols /sterols (2 g/day) and increased viscous (soluble) fiber (10-25 g/day), weight reduction and increased physical activity. In persons admitted to the hospital for a major coronary event, LDL cholesterol should be measured on admission or within 24 hours. Persons hospitalized for a coronary event or procedure should be discharged on drug therapy if the LDL cholesterol is 130 mg/ dL.[3] Some authorities hold drug therapy should be initiated whenever a patient hospitalized for a CHD- related illness is found to have an LDL Cholesterol >100 mg/dL. Initiation of drug therapy at the time of hospital discharge has two advantages. First, at that time patients are particularly motivated to undertake and adhere to risk-lowering interventions; and second, failure to initiate indicated therapy early is one of the causes of a large "treatment gap," because outpatient followup is often less consistent and more fragmented.

It is important that patients are maintained on the recommended targets for control of LDL. This is easier said than done. There is evidence that patients in the community who are at very high risk of having cardiovascular events are under treated with respect to attaining LDL-C target levels.[4] In this issue of KMJ Harikrishnan et al has tried to identify the control of cholesterol in a high risk population. The results raise some serious questions. If the cholesterol control rates reported from one of the premier cardiology centre in Kerala is so low, what would be targets achieved in other institutions and more importantly in the community? We need to muster more evidence in this regard. If the cholesterol control rates are proven to be so low then we need to urgently intervene with both professional and public education and motivation measures.

END NOTE

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