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The Optimal Low-Density Lipoprotein Is 50 to 70 mg/dl

It was with great delight that I read the report by O'Keefe et al. (1) in a recent issue of the *Journal*. It provides scientific support to my practice decisions over the last six years. I have been treating virtually all of my patients over 40 years of age to reduce their low-density lipoprotein (LDL) cholesterol to <2.0 mmol/l (77 mg/dl) with a target of 1.5 mmol/l (58 mg/dl).

I am a general practitioner in Sudbury, Ontario, which is a cardiovascular "hotspot" owing both to the genetics in the Francophone population, and our high rate of smoking and obesity. The average age of my patients is in the 60s. At last count, I had 186 patients with type II diabetes, and the usual number of smokers, hypertensive, sedentary life-style and obese patients; overall, a higher than average risk practice.

Since reading in 1998 that the average myocardial infarction (MI) patient in our part of Canada has only 1.8 cardiovascular risk factors, it has become quite clear to me that the only common denominator in an acute coronary syndrome (ACS), or thrombotic cerebral vascular accident (CVA), in my practice was an LDL of >2.0.

Hence, I have been very aggressive with LDL lowering in my patient group. As a consequence, the rate of MIs in my 3000-patient general practice has gone from 50 to 60 per year to <2 per year. I have had only a single ACS in my treated and compliant populace since 1998. This was in a woman with six of seven coronary heart disease risk factors; she began treatment in December 2000 and suffered (and survived) an ACS three months later. In the same period of time, I have had eight other ACS events in patients and one thrombotic CVA, all of which were in noncompliant patients.

It has been my practice to screen all patients over age 40 and patients in their 30s with significant family history of premature MI or a significant number of risk factors. My impression is that there is a "cut-off" level of the LDL below which the atherosclerotic process is halted, and indeed reversed by the documented function of high-density lipoprotein (HDL) in reabsorbing established plaque. It seems as though LDL is a necessary ingredient in the atherosclerotic process, in whose absence the other cardiovascular risk factors are unable to exert influence in accelerating the process.

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REPLY

We thank Dr. Clendenning for his interest in our study (1). Dr. Clendenning's suggestion that the systematic treatment of his patients to a low-density lipoprotein (LDL) cholesterol target of 2.0 mmol/l (77 mg/dl) over the past four years has markedly reduced cardiovascular event rate in his practice is fascinating and consistent with the hypothesis of our study. Several other physicians have communicated similar experiences to us that provide anecdotal support for the concept that the optimal LDL range for patients at risk for cardiovascular event is 50 to 70 mg/dl. One solo practitioner cardiologist from Idaho who has employed a similar strategy targeting the LDL to <70 mg/dl as part of a multimodal risk-factor intervention recently decided to stop performing percutaneous coronary interventions because he believed his volume of procedures has dropped too low to maintain adequate skills.

Aggressive LDL lowering has been shown to improve prognosis even in patients without coronary heart disease (CHD) who have average LDL levels at baseline, but who have CHD risks such as hypertension (2), diabetes (3), or low HDL cholesterol levels (4). This accumulating evidence suggests that achieving these lower LDL targets will improve CHD prognosis for many of our patients.

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World Trade Center Attack and Cardiac Events: Fact or Fear?

The *Journal* recently published two studies suggesting a specific increase in the number of ventricular arrhythmias in implantable defibrillator patients in the weeks following the World Trade