

# What is the best strategy for monitoring the lipid-lowering effects of medical therapy used for the primary prevention of coronary artery disease (CAD)?

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## ■ EVIDENCE-BASED ANSWER

There is good evidence that treatment for primary prevention of CAD decreases risk of major first coronary events and cardiovascular mortality, though all-cause mortality has not been shown to be reduced.<sup>1-3</sup> There is no evidence identifying the best measures for monitoring response to therapy. In the one study that titrated lovastatin, the investigators used a target fasting low-density cholesterol (LDL-C) of 110 mg/dL<sup>2</sup>. All other studies used a fixed dosage without titration. (Grade of recommendation: C.)

## ■ EVIDENCE SUMMARY

Clinicians expecting results similar to a randomized clinical trial should use treatment regimes based on those used in the trial. The Air Force/Texas Coronary Atherosclerosis Prevention Study was the only primary prevention randomized controlled trial that titrated the dose of medication (either 20 mg or 40 mg of lovastatin daily) to reach a LDL-C of 110 mg/dL<sup>2</sup> or lower. Titration was done after 3 months of therapy. All other studies used a fixed dose of medication without regard to the lipid levels obtained (cholestyramine 24 g/day,<sup>4</sup> gemfibrozil 600 mg twice daily,<sup>5</sup> clofibrate 1.6g/day,<sup>6</sup> and pravastatin 40 mg/day<sup>1</sup>). There have been no trials that test different strategies for monitoring lipid levels.

The Munster Heart Study (PROCAM)<sup>7</sup> demonstrated that “the ranking of continuous risk factors in terms of predicting major coronary events was LDL-C, total cholesterol (TC), high-density lipoprotein (HDL-C), triglycerides (TG)....” Grover and colleagues<sup>8</sup> found that the TC/HDL-C and the LDL-C/HDL-C ratios both performed better than the TC in predicting heart disease mortality. The Framingham Study<sup>9</sup> confirmed the usefulness of TC and HDL-C in assessing risk. None of the studies gave guidance on what to monitor while a patient is on treatment.

## ■ RECOMMENDATIONS FROM OTHERS

The National Cholesterol Education Program (NCEP)<sup>10</sup> recommends that LDL-C be monitored every 6 weeks

after the initiation of treatment. After the goal LDL-C is attained, measurement every 4 to 6 months is adequate.

#### **CLINICAL COMMENTARY**

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Once lipid therapy is begun, I aim to achieve NCEP recommended LDL-C. Although these levels are not based on randomized controlled trials, drug therapy effectively lowers LDL-C. Since medications less effectively elevate HDL-C and high TG is a risk mainly with elevated LDL-C, I focus on the LDL-C response. The TC, HDL-C, and TG are necessary for calculation of LDL-C.

I check lipids 5 to 12 weeks after initiating or changing therapy, allowing time for the medication to have full effect and to detect toxicities. Once LDL-C is controlled, rechecking cholesterol every 6 months provides an opportunity to readdress diet, exercise, smoking cessation, and hypertension.

#### **R E F E R E N C E S**

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