Intensive cholesterol therapy with multiple drugs effective over long term

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For the first time, a study has found that intensive cholesterol therapy involving a combination of drugs for 20 years may be more effective over the long run than taking a single statin medication.

Loyola University Health System cardiologist Binh An P. Phan, MD, FACC, is lead author of the study, which he presented at the National Lipid Association 2012 Annual Scientific Sessions. Phan is director of Loyola's Preventive Cardiology & Lipid Program.

Previous studies have documented the short-term benefits of taking a combination of two or three cholesterol drugs aimed at aggressively lowering LDL (bad cholesterol) and raising HDL (good cholesterol). The new study is the first to show such benefits are maintained over a period of 20 years.

Compared with patients who took a single statin, patients who received a combination-drug therapy had dramatically lower levels of LDL and triglycerides, higher HDL and less fatty buildup in the carotid artery.

At the start of the study, both groups had a similar age and fatty buildup in their blood vessels. After 20 years, the group taking the combination therapy had a "vascular age" that was 10.2 years younger than the group taking a single statin.

Vascular age reflects how old an individual's blood vessels appear to be, based on risk factors and the amount of plaque buildup; it can be higher

or lower than an individual's chronological age. In the single-medication group, the average vascular age at the end of the study was 84, or 20 years older than the patients' average chronological age. In the intensive therapy group, the vascular age was 74, only 7 years older than the average chronological age.

Phan and colleagues examined data from the Familial Atherosclerosis Treatment Study (FATS). The study divided patients with extremely high cholesterol into three groups: One group took the statin medication lovastatin (Mevacor®) plus a medication called colestipol that binds to cholesterol. A second group took colestipol plus niacin. A third group took a placebo.

At the time of the FATS trial, lovastatin and other statins were still unproven. Statins have since become standard therapy to lower cholesterol. They work by blocking a chemical in the liver needed to make cholesterol.

Upon completion of the initial phase of FATS, some patients agreed to continue to be followed in an observational study, which lasted for 20 years.

In this observational study, one group received a single statin and the other group received intensive combination therapy. For the first 11 years, the intensive therapy consisted of lovastatin, niacin and colestipol. After 11 years, the regimen was changed to either lovastatin or simvastatin (Zocor®), plus niacin. By the end of the study, 43 patients in the intensive therapy group were still being followed, and 26 patients in the single-medication group were still being followed.

After 20 years, the intensive therapy group had a LDL cholesterol level of 85 milligrams per deciliter, while the single-medication group had an LDL level of 103 mg/dL. The intensive therapy group also had lower

levels of triglycerides (116 mg/dL vs. 167) and higher levels of good HDL (56 mg/dL vs. 46).

Researchers conducted an ultrasound exam to measure fatty buildup in the carotid artery, called carotid intima-media thickness (CIMT). The CIMT was 17 percent thicker in the single-medication group than in the intensive combination therapy group (1.056 mm vs. 0.902 mm). Researchers used this finding to calculate that the single-medication group ended the study with a much higher vascular age.

"These findings are the first to illustrate the benefits of long-term intensive combination lipid [cholesterol] therapy for 20 years in patients with atherosclerotic disease," Phan and colleagues wrote.

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