

# Treatment of Hypercholesterolemia with Vitamins E, C and Lecithin: A Case Report

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## Abstract

*A 26-year-old female epileptic patient affected by hyperlipoproteinemia type II-A did not reduce her serum cholesterol and low density lipoprotein (LDL)/high density lipoprotein (HDL) ratio when treated with hypercholesterolemic drugs from which she developed sever side effects, therefore medication was discontinued and experimental therapy was suggested using vitamin E, C and lecithin. After one month of experimental treatment serum cholesterol and LDL/HDL ratio was greatly reduced without dietary modifications and most importantly without any apparent side effect.*

## Key Words

Hypercholesterolemia, vitamin E, vitamin C, lecithin.

## Introduction

Cardiovascular disease (CVD) is the first cause of death in the United States and Puerto Rico, causing half of the total deaths in these countries.<sup>1,2</sup>

High saturated fat intake has been correlated to CVD<sup>3,4,5</sup> especially because of the high cholesterol content that often accompanies these foods. Dietary modifications should be the fundamental choice of treatment for lowering blood lipids to try to reduce CVD incidence; although in many cases this might be difficult to accomplish. The physician then relies on the use of pharmacologic therapy. Drugs can be quite expensive and may produce an array of different side effects. We decided to explore a combination of three nutritional supplements that may produce a hypercholesterolemic effect without serious effects.

Vitamin E has been shown to affect the distribution of cholesterol in plasma lipo-

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protein by increasing HDL cholesterol portion.<sup>6,7</sup>  
<sup>8,9</sup> Vitamin C has been shown to reduce total lipids and to modify cholesterol in plasma by increasing HDL cholesterol and lowering LDL cholesterol.<sup>10,11,12,13,14</sup> Lecithin has also been reported to lower total cholesterol and to increase the high density lipoproteins.<sup>15,16,17,18</sup>

We are not aware of any prior scientific reports using a combination of these three nutrients as a treatment to lower high blood cholesterol.

## Case Report

A 26-year-old female Hispanic patient suffering hyperlipoproteinemia type II-A and epilepsy with Grand Mal seizures controlled with phenytoin 100 mg t.i.d. Her weight and height were normal (52 kg and 163 cm respectively) as was her blood pressure (122/80 mm/Hg) without any other clinical problem identified.

Previous treatment with hypercholesterolemic medication (600 mg gemfibrozil b.i.d. 30 minutes before morning and evening meals for a period of 3 months) did not lower her serum cholesterol (350 mg/dl±8). Treatment was discontinued since adverse side effects which included headache, blurred vision and vertigo became more sever during the last month of therapy.

During this time we propose our experimental therapy to the patient. After explaining possible medical/legal implications, she became interested and decided to try the clinical experimental approach. The patient continued her normal life working as a nurse in a city hospital and taking her anticonvulsive medicine. She did not change dietary habits, which consisted mainly of fast foods.

We recommended the following supplementation program: vitamin E (alpha-tocopherol) 400 IU t.i.d., vitamin C (ascor-

bic acid) 1,000 mg t.i.d. and lecithin (phosphatidyl-choline 61%) 1,200 mg one daily with evening meal.

After one month of supplementation this patient lowered her total serum cholesterol and LDL/HDL ratio without the use of drugs and/or dietary modification. No adverse side effects were noted neither manifested by the patient. Interestingly the patient reported that her general health status improved (increased vigor and alertness) (see Table 1).

### Discussion

We have encountered various reports using single nutrients reported herein to lower total serum cholesterol<sup>7 8 9 10 11 12 13 14 15</sup> but to our knowledge the possibility of a synergistic effect with these nutrients has not been previously assessed.

Vitamin E may increase HDL cholesterol.<sup>7</sup> There is also a possibility that vitamin E and LDL cholesterol may compete for transport.<sup>19</sup>

Vitamin C stimulates plasma lipoprotein lipase which is required in the catabolism of triglycerides<sup>19</sup> also cholesterol 7-alpha-hydroxylose which is utilized in the synthesis of bile acids from cholesterol may be vitamin C-dependent.<sup>20</sup>

Phosphatidyl-choline (lecithin) may be able to reduce serum lipids by increasing bile acid excretion.<sup>17 18</sup>

This result although preliminary is very interesting, since it brings a hope of lowering blood cholesterol without drugs and possible side effects. It seems desirable to perform further studies with this approach since it could be of great value for elderly patients who may be on multiple drug prescription and no additional medication to their daily intake is preferable in order to prevent possible drug-drug interactions, drug-nutrient interactions and other side effects.

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**Table 1. Lab Tests\***

<b>Analysis</b>		<b>Before Supplementation*</b>	<b>After 30 Days of Supplementation *</b>	<b>After 30 Days of Stopping Supplementation*</b>
Cholesterol	mg/dl	350	301	317
Glucose	mg/dl	65	90	91
LDH	u/l	234	174	165
Triglycerides	mg/dl	128	126	131
HDL cholesterol		43	84	52
LDL cholesterol		294	268	281
Ratio LDL/HDL		6.8	3.2	5.4

\* Standard error of 3-5 units