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REPORT

NEW HUMAN STUDIES CONFIRM CHOLESTEROL-LOWERING EFFECTS OF POLICOSANOL

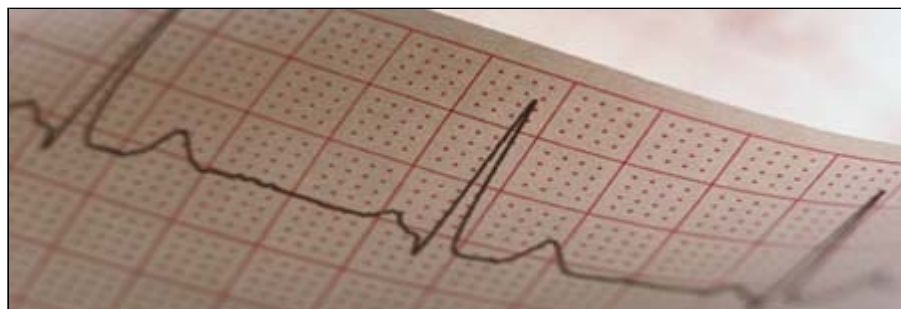
The staggering price of prescription drugs is threatening to bankrupt the U.S. healthcare system. According to the Wall Street Journal, it costs the Ford Motor Company \$704.00 per vehicle sold to pay the health-care expenses of current and retired employees.[1] Ford expects annual double-digit increases in health-care expenditures, an amount it cannot afford to pay.

Campaign contributions by drug companies have bought a lot of influence in Washington. A growing citizens revolt, however, is causing some members of Congress to question laws that enable pharmaceutical companies to charge extortionist prices.[2]

A solution to the high drug price problem can be found in the free market. An example of how a "liberated" marketplace would function is a natural agent that works as well as cholesterol-lowering drugs, is far safer and costs substantially less. The name of this dietary supplement is policosanol.

The price of policosanol has just been reduced by 40%. This means that compared to cholesterol-lowering drugs, policosanol is 90% less expensive.

In this article we reveal new studies showing that policosanol is even more effective than originally thought.



Policosanol is becoming the hottest dietary supplement on the American marketplace. Clinical studies show policosanol works as well as FDA-approved drugs in lowering cholesterol...but is free of toxic side-effects.

In addition to reducing dangerous LDL-cholesterol, policosanol increases beneficial HDL-cholesterol, inhibits abnormal platelet aggregation, protects against LDL oxidation and suppresses arterial inflammatory factors.

Several disturbing reports in year 2001 showed that FDA-approved cholesterol-lowering drugs cause more side-effects than previously reported.[3-8] One drug (Baychol) had to be withdrawn because more than 31 humans died from its toxic side-effects in the United States alone.[9]

Contrary to the negative reports on cholesterol-lowering drugs, new studies show policosanol is ultra-safe and even more effective than what previous studies indicated.

In a randomized, double-blind study published in the International Journal of Clinical Pharmacological Research, doctors investigated the efficacy and tolerability of policosanol at doses of 20 mg a day compared with 40 mg a day. Patients with high cholesterol had been on a cholesterol-lowering diet, but failed to achieve desired results. The patients were instructed to continue the cholesterol-lowering diet and were allocated to receive either placebo, policosanol 20 mg/day, or 40 mg/day.

FDA-Approved Drugs
Don't Always Work...
Neither Does Policosanol

Near the end of year 2001, a report was published showing that in 18% of cases, FDA-approved cholesterol-lowering drugs don't work.* There are also people who do not achieve

After 24 weeks, policosanol at 20 and 40 mg/day lowered LDL-cholesterol by 27.4% and 28.1%, while total cholesterol was reduced by 15.6% and 17.3% respectively. Most impressive was the finding that beneficial HDL-cholesterol was increased by 17.6% in the 20mg/day and 17% in the 40 mg/day policosanol groups. There were no significant changes in the placebo group.

High levels of HDL-cholesterol may be the most important factor in protecting against cholesterol-induced arterial disease. It is the HDL molecule that removes plaque from arterial walls. Scientific studies show that people with the highest levels of HDL cholesterol have the greatest longevity.

The conclusion of this study was that 20 mg a day of policosanol provides about the same cholesterol-lowering efficacy as 40 mg a day. Consistent with previous studies, no adverse effects were observed.[10]

In another recent study, the effects of policosanol were measured on menopausal women in a randomized, double-blind, multicenter placebo-controlled trial. These women showed elevated total and LDL cholesterol despite a six-week standard lipid-lowering diet. Eligible patients were randomized to receive placebo or policosanol 5 mg/day for eight weeks and the dose was doubled to 10 mg/day during the next eight weeks.

Policosanol (5 and 10 mg/day) significantly decreased LDL-cholesterol (17.3% and 26.7%, respectively) and total cholesterol (12.9% and 19.5%). HDL-cholesterol levels were raised by 7.4% at study completion. No significant changes occurred in the lipid profile of the placebo group. No drug-related adverse effects were observed.

In addition, 46.4% of the policosanol group reported improvements in chronic symptoms and health perception compared to only 17.9% in the placebo group. The conclusion of the study was that policosanol was effective and well tolerated in hypercholesterolemic postmenopausal women, showing additional benefits in health perception.[11]

In still another new study published in the Journal of Gerontology and Biological Science-Medical Science, the effects of policosanol in older patients with high cholesterol and more than one other atherosclerotic risk factor was investigated. After six weeks on a lipid-lowering diet, patients randomly received a placebo or policosanol.

Policosanol (5 and 10 mg/day) significantly reduced LDL-cholesterol (16.9% and 24.4%, respectively) and total cholesterol (12.8% and 16.2%, respectively), while significantly increasing HDL-cholesterol by 14.6% and 29.1%, respectively. Triglyceride levels remained un-changed. Policosanol, but not the placebo, significantly improved cardiovascular capacity, which was assessed using the Specific Activity Scale. No serious adverse experiences occurred in the policosanol patients. The conclusions of this study were that policosanol is effective, safe and well tolerated in older patients with high cholesterol.[12]

Purchase Policosanol from the Life Extension Foundation

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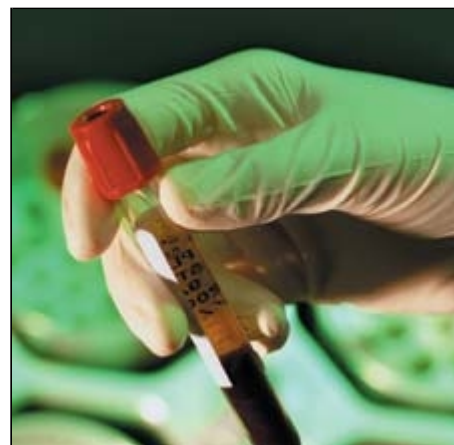
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adequate cholesterol reduction with policosanol. That is why it is so important to have your blood tested when using policosanol (or FDA-approved drugs). Some people will only require 5 mg to 10 mg a day of policosanol, while others may need 20 mg/day. The same dosage variation may be true of cholesterol-lowering drugs.

A standard blood chemistry profile measures total cholesterol, LDL-cholesterol, HDL-cholesterol and numerous other parameters such as liver and kidney function. By taking this blood test two months after beginning policosanol, you can adjust the dose to meet your individual need. This standard blood chemistry test can be done at your doctor's office or you can order it directly by calling 1-800-208-3444. (Life Extension member price is \$45.00 for this 37 panel blood test)

If you are unable to achieve desired cholesterol levels with diet, policosanol and/or FDA-approved drugs, there are other approaches. For assistance in this area, Life Extension members can call 1-800-226-2370

* Joseph P. Frolkis, Dennis L. Sprecher, Gregory L. Pearce. Cleveland LDL Cholesterol Response to Statin Therapy: There's Nothing "Normal" about the Distribution. Clin Fdn Cleveland OH. Circulation Supplement Oct 23, 2001 Vol 104 # 17. Population Science Abstracts from Scientific Session Sessions 2001 II-813/ 3816.



REPORT

Policosanol improves blood flow

Intermittent claudication is a disease characterized by severe occlusion of the arterial system in the lower part of the body.

A study published in the journal *Angiology* investigated the long-term effects of policosanol administered to patients with moderately severe intermittent claudication. The study consisted of a six-week single-blind, placebo-controlled run-in phase, followed by a two-year double-blind, randomized treatment step. Patients were randomized to receive placebo or policosanol (10 mg twice daily). Walking distances on a treadmill were assessed before and after 6, 12, 18 and 24 months of treatment. After six months of therapy, policosanol significantly increased the initial claudication distance by an average of 36% and the absolute claudication distance by an average of 42%. There were no improvements in the placebo group.



Heart attack and stroke have been associated with high levels of a type of cholesterol known as low-density lipoprotein (LDL) ("bad" cholesterol) and low levels of high-density lipoprotein (HDL) ("good" cholesterol). Reversing these trends can lower the risk for these and other artery-related diseases.

In the policosanol group, the beneficial effects improved after long-term therapy, so that final values showed an average of 62% improvement in the initial claudication distance and 66% in the absolute claudication distance, both significantly greater than those obtained in the placebo group. Policosanol, but not placebo, significantly increased the ankle/arm pressure index. In addition, from month six up to study completion, the frequency of patients reporting improvement of lower limb symptoms was greater in the policosanol group than in the placebo group. The treatment was tolerated well. Eight patients in the placebo group experienced a total of 10 serious adverse events, 8 of which were vascular events, compared with none in the policosanol group.[13]

While intermittent claudication is one of the most severe occlusive arterial diseases, the aging process itself results in diminished circulation throughout the body, indicating a significant potential benefit of policosanol to normal aging humans in addition to cholesterol reduction.

Summary

Heart attack and stroke have been associated with high levels of a type of cholesterol known as low-density lipoprotein (LDL) ("bad" cholesterol) and low levels of high-density lipoprotein (HDL) ("good" cholesterol). Reversing these trends can lower the risk for these and other artery-related diseases.

Policosanol is a dietary supplement that can normalize cholesterol as well or better than drugs, without side effects.[14] Efficacy and safety have been proven in numerous clinical trials, and it has been used by millions of people in other countries. Policosanol lowers LDL-cholesterol and raises protective HDL-cholesterol. This compares favorably with cholesterol-lowering drugs which have the drawback of side effects such as liver dysfunction and muscle atrophy. Policosanol is free of these side effects.

What makes policosanol exciting is that it has other actions against heart disease in addition to lowering cholesterol. Like statin drugs, policosanol helps stop the formation of artery lesions.[15] This was proven in studies on rabbits fed a diet designed to create high cholesterol:

"In most policosanol-treated animals, atherosclerotic lesions were not present, and in others, thickness of fatty streaks had less foam cell layers than in controls." [16]

One of policosanol's important actions is to inhibit the oxidation of LDL.[17] Oxidized LDL is dangerous. It promotes the destruction of blood vessels by creating a chronic inflammatory response. Oxidized LDL can also provoke metalloproteinase enzymes.[18] These enzymes promote blood vessel destruction, partly by interfering with HDL's protective effect. Studies show that rats treated with policosanol have fewer foam cells, reflecting less inflammatory response causing less blood vessel destruction.[19,20]

Another action of policosanol is to reduce the proliferation of cells on the lining of the arteries. Healthy arteries are lined with a smooth layer of cells so that blood can race through with no resistance. One of the features of diseased arteries is that this layer becomes thick and overgrown with cells. As the artery narrows, blood flow slows down or is blocked completely. Policosanol was

tested for its ability to stop the proliferation of these cells.[21] According to the results, policosanol's ability to stop cell overgrowth "is in agreement with the antiproliferative effects reported for other lipid-lowering drugs, such as most of the statins." [22]

Policosanol also inhibits the formation of clots, and may work synergistically with aspirin in this respect. In a comparison of aspirin and policosanol, aspirin was better at reducing one type of platelet aggregation (clumping together of blood cells). But policosanol was better at inhibiting another type. Together, policosanol and aspirin worked better than either alone.[23,24] A related effect is that significant reductions in the level of thromboxane occur in humans after two weeks of policosanol.²⁵ Thromboxane is a blood vessel-constricting agent that contributes to abnormal platelet aggregation that can cause a heart attack or stroke.

Those who have elevated LDL-cholesterol (over 100) or low HDL-cholesterol (under 50) should seek to protect themselves from the number one killer of Americans (cardiovascular disease). Some people can achieve optimal cholesterol levels via dietary modification, while others require intervention with dietary supplements like policosanol or prescription drugs.

Note: Reprints of scientific abstracts can be found in the Life Extension Abstracts section.

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1. Wall Street Journal Nov 21, 2001, page A1. Page One Feature, "Auto Industry Faces Effects of Price Pressure As Economists Debate Possibility of Deflation," by Norihiko Shirouzu and Jon E. Hilsenrath, Staff Reporters of the Wall Street Journal.
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