Dynamic Chiropractic

Cholesterol-Lowering Diet Reduces Blood Cholesterol to Similar Degree as Prescription Statin Drug (Lovastatin) in Head-to-Head Clinical Trial

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A recent study published in *The American Journal of Clinical Nutrition* showed that the cholesterol-lowering effect of newer dietary strategies (portfolio diet) could be similar to the effects of daily ingestion of 20 mg of lovastatin, in a population of 34 hyperlipidemic participants. In the study design, each hyperlipidemic participant underwent all three one-month treatments in random order as an outpatient. The three treatments were as follows:

1. a diet very low in saturated fat [the control diet];
2. the control diet plus 20 mg per day of lovastatin;
3. a diet high in plant sterols (1,000 mg per 1,000 kcal), soy protein foods (soy milks and soy burgers (21.4 grams per 1,000 kcal), almonds (14 grams per 1,000 kcal), and viscous fibers from oats, barley, psyllium, and the vegetables okra and eggplant (10 grams per 1000 kcal) [the portfolio diet].

After four weeks on the control diet plus lovastatin, patients' cholesterol levels dropped by approximately 34.5 percent, compared to a drop by 29.1 percent for those on the portfolio diet. Those following only a diet very low in saturated fat witnessed an 8.5 percent reduction in blood cholesterol after four weeks. Although the absolute difference between the lovastatin group and the portfolio group was significant after four weeks, nine participants (26 percent of the population) achieved their lowest LDL cholesterol concentrations with the portfolio diet.

This study illustrates the effectiveness of combining recently recommended dietary components, as set out by the National Cholesterol Education Program - Adult Treatment Panel III and the American Heart Association, to maximize the cholesterol-lowering effect available using dietary practices. Viscous fiber, soy protein, plant sterols and almonds have all been recognized for their ability to lower cholesterol. Viscous fiber increases excretion of bile acids (preventing their reabsorption and subsequent conversion into cholesterol within the liver), plant sterols reduce cholesterol absorption, soy protein is reported to reduce hepatic cholesterol synthesis and increase hepatic LDL cholesterol receptor activity (which would help clear excess cholesterol from the bloodstream), and almonds have been shown to provide a number of cholesterol-lowering effects due to the presence of monounsaturated fats, plant sterols, vegetable proteins, fiber and other phytonutrients.

Diet and lifestyle changes have always been recommended as the first line of treatment in mild hyper-lipidemia and type 2 diabetes. In recent years, studies involving statin drugs (e.g., lovastatin, simvastatin, etc.) have been successful in reducing cardiovascular disease and all-cause mortality. As such, many physicians now prescribe these drugs as the first line of treatment (primary prevention) in patients presenting with high cholesterol or hyperlipidemia, instead of using documented dietary measures as the first treatment option. This approach appears to be

unwarranted, as studies now indicate that dietary measures can produce similar levels of success regarding cholesterol reduc-tion without risk of the side-effects associated with statin drug use.

Side-Effects of Statin Drugs

Many experts caution against the use of statin drugs as a means of primary prevention to lower cholesterol, due to the serious nature of the side-effects that can arise from their use. Statin drugs such as lovastatin (Mevacor) inhibit the enzyme known as 3-hydroxy-3-methylglutaryl-coenzyme A (HMG-CoA) reductase. This enzyme catalyzes the conversion of HMG-CoA to mevalonate, a rate-limiting step in the biosynthesis of cholesterol, which primarily occurs in the liver.

Two commonly cited side-effects of statin drugs involve liver damage (as evidenced by elevated blood levels of the liver enzymes) and myopathy, manifested as muscle pain, tenderness or weakness with creatine kinase (CK) above 10 times the upper limit of normal (ULN). Myopathy sometimes takes the form of rhabdomyolysis with or without acute renal failure secondary to myoglobinuria, and rare fatalities have occurred. According to some studies, approximately 11 percent of patients had elevations of CK levels of at least twice the normal value on one or more occasions.

Other documented side-effects associated with statin drugs include muscle cramps, myalgia, arthralgias, dysfunction of certain cranial nerves (including alteration of taste, impairment of extraocular movement, facial paresis), tremor, dizziness, vertigo, memory loss, paresthesia, peripheral neuropathy, peripheral nerve palsy, psychic disturbances, anxiety, insomnia, depression, hypersensitivity reactions,pancreatitis, hepatitis, including chronic active hepatitis, cholestatic jaundice, fatty change in liver; and rarely, cirrhosis, fulminant hepatic necrosis, and hepatoma; anorexia, vomiting,alopecia, pruritus, a variety of skin changes (e.g., nodules, discoloration, dryness of skin/mucous membranes, changes to hair/nails), gynecomastia, loss of libido, erectile dysfunction, progression of cataracts (lens opacities), ophthalmoplegia, along with laboratory abnormalities:*elevated transaminases, alkaline phosphatase, (gamma)-glutamyl transpeptidase, and bilirubin; thyroid function abnormalities.*

Dietary Measures Should Be Used First

Due to the unknown effects of long-term use of statin drugs (usage over many years), combined with the known side-effects documented to date, many experts and expert panels subscribe to the notion that dietary measures should be the first line of defense to reduce high cholesterol levels in the primary prevention of cardiovascular disease. The recent study by D. Jenkins, et al., provides substantial support to this end.

This study should be of interest to holistic health doctors, who are concerned with natural approaches to the prevention and treatment of health conditions, and helping patients reduce risk of adverse side-effects caused by the overuse and abuse of certain drugs - common features of the current health care system.

It also should be noted that supplementation with gugulipid and policosanol, two natural health supplements, has been shown to lower cholesterol and triglycerides to a similar degree as many commonly prescribed prescription drugs, with occurrence of fewer and less severe side-effects. Natural health practitioners interested in this subject should familiarize themselves with the studies related to these two natural agents.

Conclusion

In summary, by introducing hyperlipidemic patients to the cholesterol-lowering dietary approach

used by D. Jenkins, et al., in the primary prevention of cardiovascular disease, many individuals can avoid the use of statin drugs, eliminating the risk of liver damage and other problems associated with these medications. In more stubborn cases, the concurrent supplementation of 75 mg of guggulsterones (e.g., 1,000 mg gugulipid, three times per day, standardized to 2.5 percent guggulsterone content) and 10 mg of policosanol per day, can be used to further reduce blood cholesterol and triglyceride levels.

Treatment goals in the primary prevention of cardiovascular disease include LDL-cholesterol concentrations below 160 mg/dL (4.15 mmol/L), with no more than one risk factor, and at or below 120 mg/dL (3.4 mmol/L) with two or more risk factors. In the case of secondary prevention (i.e., the patient has previously suffered a cardiovascular event or established cardiovascular disease), an LDL cholesterol concentration at or below 100 mg/dL (2.6 mmol/L) is advised.

In regards to primary prevention, according to the Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (III), drug therapy is recommended when "diet" has failed to reduce LDL cholesterol concentrations to below 120 mg/dL (3.4 mmol/L) in persons with two or more risk factors or in persons who have a calculated 10-year coronary heart disease risk of 10 percent to 20 percent, according to the Framingham cardiovascular disease prediction equation.

In many cases of hyperlipidemia, the use of aggressive dietary strategies, as outlined in this article, in combination with gugulipid and policosanol (when diet alone is not sufficient) in the primary prevention of cardiovascular disease, can help eliminate reliance on statin drugs, which carry the risk of many unpleasant and sometimes serious side-effects.

Resources

1. Jenkins D, Kendall C, Marchie A, Faulkner D, Wong J, et al. Direct comparison of a dietary portfolio of cholesterol-lowering foods with a statin in hypercholesterolemic participants. *Am J Clin Nutr*. 200;81:380-7.
2. www.drugs.com (lovastatin).
3. Singh K, Chander R, Kapoor NK. Guggulsterone, a potent hypolipidaemic, prevents oxidation of low density lipoprotein. *Phytother Res* 1997;11:291-4.
4. Canetti M, Moreira M, Más R, et al. A two-year study on the efficacy and tolerability of policosanol in patients with type II hyperlipoproteinaemia. *Int J Clin Pharmacol Res* 1995;15(4):159-65.

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