

The Effect of Raw Garlic vs. Commercial Garlic Supplements on Plasma Lipid Concentrations in Adults with Moderate Hypercholesterolemia

A Randomized Clinical Trial

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Background - Garlic is widely promoted as a cholesterol lowering agent, but efficacy studies have given conflicting results. Garlic supplements differ in bioavailability of key phytochemicals. We evaluated the effect of raw garlic and two commonly used garlic supplements on cholesterol levels in moderately hypercholesterolemic adults.

Methods - In this parallel-design trial, 192 adults with low-density lipoprotein cholesterol (LDL-C) concentrations of 130-190 mg/dL (3.36-4.91 mmol/L) were randomly assigned to one of four treatment arms: raw garlic, powdered garlic supplement, aged garlic extract supplement, or placebo. Garlic product doses equivalent to an average size garlic clove were consumed six days/week for six months. The primary study outcome was LDL-C concentration. Fasting plasma lipids were assessed monthly. Extensive chemical characterization of study materials was conducted throughout the trial.

Results - Retention was 87-90% in all four treatment arms, and chemical stability of study materials was high throughout the trial. There were no statistically significant effects of the three forms of garlic on LDL-C concentrations. The six-month mean (SD) changes in LDL-C concentrations were +0.4 (19.3) mg/dL (+0.01 [0.50] mmol/L), +3.2 (17.2) mg/dL (+0.08 [0.44] mmol/L), +0.2 (17.8) mg/dL (+0.005 [0.46] mmol/L), and -3.9 (16.5) mg/dL (-0.10 [0.43] mmol/L) for raw garlic, powdered supplement, aged extract supplement, and placebo, respectively. There were no statistically significant effects on high-density lipoprotein cholesterol (HDL-C), triglycerides or total-cholesterol/HDL-C ratio.

Conclusions – None of the forms of garlic used in this study, including raw garlic, when given at doses of roughly a 4-gram clove/day six days/week for six months, had statistically or clinically significant effects on LDL-C or other plasma lipid concentrations among moderately hypercholesterolemic adults.

Clinical Trial registry: <http://clinicaltrials.gov/show/NCT00056511>

Arch Intern Med. 2007;167:346-353