

# Abstract

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## L-Carnitine/Simvastatin Reduces Lipoprotein (a) Levels Compared with Simvastatin Monotherapy: A Randomized Double-Blind Placebo-Controlled Study.

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**BACKGROUND:** Lipoprotein (a) [Lp(a)] is an independent risk factor for cardiovascular disease. There are currently limited therapeutic options to lower Lp(a) levels. L-Carnitine has been reported to reduce Lp(a) levels.

**OBJECTIVE:** The aim of this study was to compare the effect of L-carnitine/simvastatin co-administration with that of simvastatin monotherapy on Lp(a) levels in subjects with mixed hyperlipidemia and elevated Lp(a) concentration.

**METHODS:** Subjects with levels of low-density lipoprotein cholesterol (LDL-C) >160 mg/dL, triacylglycerol (TAG) >150 mg/dL and Lp(a) >20 mg/dL were included in this study. Subjects were randomly allocated to receive L-carnitine 2 g/day plus simvastatin 20 mg/day (N = 29) or placebo plus simvastatin 20 mg/day (N = 29) for a total of 12 weeks.

**RESULTS:** Lp(a) was significantly reduced in the L-carnitine/simvastatin group [-19.4%, from 52 (20-171) to 42 (15-102) mg/dL;  $p = 0.01$ ], but not in the placebo/simvastatin group [-6.7%, from 56 (26-108) to 52 (27-93) mg/dL,  $p = \text{NS}$  versus baseline and  $p = 0.016$  for the comparison between groups]. Similar significant reductions in total cholesterol, LDL-C, apolipoprotein (apo) B and TAG were observed in both groups.

**CONCLUSION:** Co-administration of L-carnitine with simvastatin was associated with a significant, albeit modest, reduction in Lp(a) compared with simvastatin monotherapy in subjects with mixed hyperlipidemia and elevated baseline Lp(a) levels.

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