

Abstract

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Lipoprotein(a) Levels and Risk of Future Coronary Heart Disease: Large-Scale Prospective Data.

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BACKGROUND: Large-scale prospective data are needed to determine whether associations between lipoprotein(a) (Lp[a]) and coronary heart disease (CHD) risk are independent of established risk factors, to characterize the shape of this relationship, and to quantify associations in relevant subgroups.

METHODS: Levels of Lp(a) were measured in samples obtained at baseline from 2047 patients who had first-ever nonfatal myocardial infarction or who died of CHD during the study and from 3921 control participants in the Reykjavik Study (n = 18 569), as well as in paired samples obtained 12 years apart from 372 participants to quantify within-person fluctuations.

RESULTS: Baseline Lp(a) levels had little or no correlation with known cardiovascular risk factors, such as age, sex, total cholesterol level, and blood pressure. The Lp(a) values were highly consistent from decade to decade, with a regression dilution ratio (calculated on the log scale) of 0.92 (95% confidence interval, 0.85-0.99). The odds ratio for CHD, unaltered after adjustment for several established risk factors (age, sex, smoking status, blood pressure, total cholesterol, triglycerides level, diabetes mellitus, and body mass index), was 1.60 (95% confidence interval, 1.38-1.85) in a comparison of extreme thirds of baseline Lp(a) levels. Odds ratios were progressively higher with increasing Lp(a) levels and did not vary materially by several individual- or study-level characteristics.

CONCLUSIONS: There are independent, continuous associations between Lp(a) levels and risk of future CHD in a broad range of individuals. Levels of Lp(a) are highly stable within individuals across many years and are only weakly correlated with known risk factors. Further assessment of their possible role in CHD prevention is warranted.

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