Abstract

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Distribution and correlates of lipoprotein-associated phospholipase A2 in an elderly cohort: the Cardiovascular Health Study.

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OBJECTIVES: To determine whether high levels of lipoprotein-associated phospholipase A(2) (Lp-PLA(2)) are associated with prevalent cardiovascular disease (CVD) and to evaluate factors most influencing Lp-PLA(2) levels in a community-based cohort of older adults.

DESIGN: Cross-sectional.

SETTING: The Cardiovascular Health Study (CHS), a population-based cohort study of men and women aged 65 and older.

PARTICIPANTS: Five thousand five hundred thirty-one CHS participants.

MEASUREMENTS: Levels of Lp-PLA(2) activity were determined using stored blood samples from the baseline examination.

RESULTS: Mean Lp-PLA(2) was higher in participants with electrocardiographically determined ventricular conduction defect and major Q-wave abnormality and was positively correlated with left ventricular (LV) mass. It was high in those with echocardiographically determined abnormal LV ejection fraction, which persisted after adjustment. Mean Lp-PLA(2) was also higher in participants with mild renal insufficiency and kidney disease. After multivariable adjustment, there was a modest but significant 27% greater risk of prevalent CHF per standard deviation increment of Lp-PLA(2) and a modest but significant 12% greater risk of prevalent myocardial infarction. Lp-PLA(2) was weakly but mainly most strongly correlated with cholesterol and lipoproteins, but those correlations were not especially strong. Lp-PLA(2) was weakly positively correlated with soluble intercellular adhesion molecule-1 but not interleukin-6. In total, all factors considered could explain only 29% of Lp-PLA(2) activity.

CONCLUSION: Novel findings in the study are the associations, in those aged 65 and older, between Lp-PLA(2) activity and LV dysfunction, CHF, and renal disease. CVD risk factors only minimally explain levels of Lp-PLA(2).

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