

Abstract

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Prospective study of C-reactive protein, homocysteine, and plasma lipid levels as predictors of sudden cardiac death.

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BACKGROUND: Sudden cardiac death (SCD) is an important cause of mortality even among apparently healthy populations. However, our ability to identify those at risk for SCD in the general population is poor, and more specific markers are needed.

METHODS AND RESULTS: To compare and contrast the relative importance of C-reactive protein (CRP), homocysteine, and lipids as long-term predictors of SCD, we performed a prospective, nested, case-control analysis involving 97 cases of SCD among apparently healthy men enrolled in the Physician's Health Study. Of these plasma markers measured, only baseline CRP levels were significantly associated with the risk of SCD over the ensuing 17 years of follow-up (P for trend=0.001). The increase in risk associated with CRP levels was primarily seen among men in the highest quartile, who were at a 2.78-fold increased risk of SCD (95% CI 1.35 to 5.72) compared with men in the lowest quartile. These results were not significantly altered in analyses that (in addition to the matching variables of age and smoking status) controlled for lipid parameters, homocysteine, and multiple cardiac risk factors (relative risk for highest versus lowest quartile 2.65, 95% CI 0.79 to 8.83; P for trend=0.03). In contrast to the positive relationship observed for CRP, neither homocysteine nor lipid levels were significantly associated with risk of SCD.

CONCLUSIONS: These prospective data suggest that CRP levels may be useful in identifying apparently healthy men who are at an increased long-term risk of SCD.

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