

Increased high sensitivity C-reactive protein and neutrophil count are related to increased standard cardiovascular risk factors in healthy Chinese men

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Abstract

BACKGROUND: Epidemiologic data regarding the role of inflammation in atherosclerosis have been based mainly on Caucasian populations. Thus, we analyzed the cross-sectional relationships of inflammatory biomarkers to cardiovascular risk factors (CVRF) and related variables in a large group of healthy Chinese men, a population with a markedly lower heart disease mortality rate compared with Western populations. **METHODS:** The study consisted of 8374 men aged 20-80 who attended a voluntary health examination at a metropolitan university center between 1997 and 2002. The relationships between serum high sensitivity C-reactive protein (hsCRP), total white blood cell (WBC), neutrophil, and monocyte counts to CVRF were analyzed using multivariate linear and logistic regression analyses. Whether a dose-response effect existed between elevated levels of each marker and increasing numbers of CVRF was also evaluated. **RESULTS:** The distribution of hsCRP was similar to Western studies. Both multivariate regression analyses showed all four markers to have significant correlations with body mass index, triglycerides, and adverse high density lipoprotein/low density lipoprotein ratio. Smoking was associated with increased levels of all four markers. Elevated neutrophil count had the most markedly progressive dose-response effect with increasing numbers of CVRF, whereas elevated monocyte count showed a drop in risk with CVRF of five and above. **CONCLUSION:** We show in our study that with increasing numbers of standard CVRF, healthy Chinese men have progressive and increasing risks of having elevated levels of hsCRP, total WBC, and neutrophil counts. While the inflammatory markers surveyed were largely correlated with CVRF, the similar values of CRP between populations with divergent mortality rates suggest that a more complex relationship may exist between CRP and disease outcome. The possible utility of neutrophil count as a marker for cardiovascular disease risk in healthy men awaits further evaluation in prospective studies.