Correlation between C-Reactive Protein and Hypertension in a Hispanic and non-Hispanic White population in Miami, Florida

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BACKGROUND

Previous studies have shown an association between CRP, a marker of inflammation, and hypertension in multiple populations. However, this correlation has been reported not to exist in some Hispanic populations. We therefore examined the association between hs-CRP and hypertension in a large Hispanic and non-Hispanic white (NHW) screening population in Miami.

METHODS

Between 1997-2006, the Florida Heart Research Institute performed free, voluntary cardiovascular risk screenings for 3360 Hispanics, and 1694 non-Hispanic whites. Hispanics were largely Caribbean and South American in origin; less than 1% were Mexican. CRP assays were performed on 3259 Hispanics (2070 women, 1189 men) and 1573 NHWs (886 women, 687 men). Binary logistic regression analyses were performed to test for an association of hs-CRP with prehypertension and hypertension among both ethnic groups. In addition to CRP level, age, gender, body mass index (BMI), fasting blood glucose and lipid profile, current smoking and exercise were also included in the logistic regressions. Because of the multiple number of logistic regressions performed, the significance level (alpha) was set at = 0.01.

RESULTS

A high CRP level (>3.0 mg/L) was independently associated with prehypertension and hypertension in both Hispanics ( OR = 1.39, CI = 1.13, 1.70 for prehypertension; OR = 1.39, CI = 1.07, 1.79 for hypertension) and NHW ( OR = 1.52, CI = 1.11, 2.09 for prehypertension; OR = 2.23, CI = 1.54, 3.22 for hypertension). Other independent risk factors for prehypertension and hypertension included age, gender, BMI, triglyceride, and glucose level in both Hispanic and NHW; cholesterol level was correlated with hypertension among Hispanics but not NHW.

CONCLUSIONS

CRP level was independently associated with prehypertension and hypertension among both Hispanics and NHWs. While other investigators failed to find this correlation among Hispanics, our sample of Hispanics displayed correlates of hypertension which appear to be similar to that of NHWs with regard to CRP as well as other cardiovascular risk factors. This difference from previous findings may reflect the distinctive origins of the Miami Hispanic population, and warrants further investigation.