Background: Hypercholesteremic (HC) patients with metabolic syndrome (MS) are at high risk for coronary heart disease (CHD) due to elevated LDL-C and triglycerides (TG), and low HDL-C. In cases of homozygous familial hypercholesterolemia (HCH), LDL-C >100 mg/dL was associated with aortic differences were significantly higher in patients with multiple vessel disease than in those with normal coronary angiography (OR = 1.53 - 2.84), stroke (OR = 2.16, 95% CI = 1.46 - 3.10) and the combined outcome (OR = 2.05, 95% CI = 1.64 - 2.57). The combined outcome association was observed in both women (OR = 2.20, 95% CI = 1.56 - 3.11) and men (OR = 1.98, 95% CI = 1.34 - 2.79). Among the component conditions, IR (OR = 1.30, 95% CI = 1.07 - 1.66), low HDL (OR = 1.35, 95% CI = 1.05 - 1.74), HTN (OR = 1.44, 95% CI = 1.01, 2.08) and hypertriglyceridemia (OR = 1.96, 95% CI = 1.20 - 3.30) were significantly related to the combined outcome in multivariable analysis; only obesity, as measured by waist circumference, was not independently related to disease (OR = 1.11, 95% CI = 0.88 - 1.42). Conclusions: These results indicate a strong, consistent relationship of the Metabolic Syndrome, as defined in NCEP-ATP III, with history of MI and stroke. The individual component conditions, IR, HTN, low HDL, and hyperglycemia were all found to be significantly associated with history of MI and stroke. These results emphasize the importance of the Metabolic Syndrome in the progression of atherosclerotic disease.

Elevated C-Reactive Protein in High-Risk Asymptomatic Individuals Is Strongly Associated With The Metabolic Syndrome

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Background: Chronic inflammation has been associated with certain components of the metabolic syndrome. The purpose of this study was to examine the relationship between C-reactive protein (CRP), a sensitive biomarker for coronary atherosclerosis, and components of this syndrome as measured by waist circumference and serum lipid levels. Methods: We investigated whether high-sensitivity CRP (hs-CRP) is independently associated with the clustering of metabolic abnormalities in 368 apparently healthy asymptomatic individuals identified from a population-based cohort study of SIBS 62 years, 43% male, 60% African-American). MS components were defined using ATP III guidelines for abdominal obesity, high triglycerides, low HDL cholesterol, high blood pressure, and high glucose.

Results: Mean hs-CRP was 4.4 ± 3.5 mL/L. There was a significant difference in mean hs-CRP in those with MS (≥ 3 components) compared to those without MS (5.7 versus 4.0, p<0.0001). There was a graded increase in mean hs-CRP levels with increasing number of MS components present, p<0.05 for trend <0.0001 (Table). Using multiple linear regression, each additional component of MS was associated with a 0.9 ± 0.1 mL/L increase in mean hs-CRP level (p<0.0001), after adjusting for age, sex, race, and smoking status.

Conclusions: These findings suggest that C-reactive protein is strongly associated with the metabolic syndrome in high-risk individuals who may benefit from further risk stratification using hs-CRP levels.