

Interferon Gamma-Induced Protein 10 (IP-10) and Cardiovascular Disease in African Americans

Abstract

Biomarkers of chronic inflammation (such as C-reactive protein) have long been associated with cardiovascular disease and mortality; however, biomarkers involved in antiviral cytokine induction and adaptive immune system activation remain largely unexamined. **Objective:** We hypothesized the cytokine interferon gamma inducible protein 10 (IP-10) would be associated with clinical and subclinical cardiovascular disease and all-cause mortality in African Americans. **Approach:** We assessed these associations in the Jackson Heart Study (JHS) cohort and the REasons for Geographic and Racial Differences in Stroke (REGARDS) study. **Results:** There was a modest association of IP-10 with higher odds of left ventricular hypertrophy (OR=1.14 (95% confidence interval (CI) 1.00, 1.29) per standard deviation (SD) higher IP-10 (105 pg/mL) in JHS). We did not observe associations with ankle brachial index, intima-media thickness, or arterial calcification. Each SD higher increment of IP-10 concentration was associated with incident heart failure (hazard ratio (HR) 1.12; 95% CI 1.02, 1.24, $p=0.02$) in JHS, and with overall mortality in both JHS (HR 1.07 per SD, 95% CI 1.01, 1.14, $p=0.02$) and REGARDS (HR 1.25 per SD, 95% CI 1.09, 1.43, $p=0.001$, SD=133 pg/mL), adjusting for cardiovascular risk factors and C-reactive protein. However, we found no association between IP-10 and stroke or coronary heart disease. **Conclusion:** These results suggest a role of IP-10 in heart failure and mortality risk independent of C-reactive protein. Further research is needed to investigate how the body's response to chronic viral infection may mediate heart failure and overall mortality risk in African Americans.