

Is the Relationship Between Depression and Inflammatory Markers Modulated by Coronary Artery Disease in Women? The NHLBI-Sponsored Women's Ischemia Syndrome Evaluation (WISE) Study

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Background: Recent evidence has demonstrated a link between depression and inflammation, both risk factors for atherosclerosis in women. Whether this association is due to underlying coronary artery disease (CAD) in depressed persons remains controversial.

Methods: We evaluated the relationship between high-sensitivity C-reactive protein (CRP), interleukin-6 (IL6), and Beck Depression Inventory (BDI) scores in 567 women undergoing coronary angiography for suspected ischemia. Baseline angiograms were quantitatively assessed by a core lab. Because of skewed distributions, inflammatory markers were log transformed or presented as medians. Separate multivariate linear models were evaluated for CRP and IL6.

Results: The mean age was 58±11 years, 17% were non-white, 32% had coronary artery disease (CAD), 55% had abnormally high CRP (>3.0 mg/L), and 28% were depressed (BDI>10). BDI and CAD were not related ($p=0.48$). Median CRP and IL6 increased by BDI tertiles (2.48, 3.55, 5.08 [$p=0.0001$] and 2.24, 2.94, 3.34 [$p<0.0001$], respectively). BDI remained a significant predictor of inflammatory markers when adjusting for waist circumference, age, or the non-significant covariates of diabetes, family history of CAD, dyslipidemia, hypertension, race, smoking, and typical angina. Adding CAD presence or severity to the model reduced the relationships by no more than 3%, and a CAD*BDI interaction term was not significant.

Conclusion: In women undergoing coronary angiography, depression and inflammatory markers are strongly related. This relationship is not modulated by the presence or severity of CAD.