CIRCULATING VEGF CONCENTRATIONS ARE INDEPENDENTLY PREDICTIVE OF CORONARY ARTERY DISEASE SEVERITY MEASURED BY QUANTITATIVE CORONARY ANGIOGRAPHY IN PATIENTS WITH STABLE ANGINA

ACC Poster Contributions
Ernest N. Morial Convention Center, Hall F
Sunday, April 03, 2011, 3:30 p.m.-4:45 p.m.

Session Title: Cardiovascular Risk Factors
Abstract Category: 8. Vascular Biology/Atherosclerosis/Thrombosis/Endothelium
Session-Poster Board Number: 1041-87

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Introduction: VEGF is hypothesized to be implicated in the development and progression of atherosclerotic plaques by promoting intra-plaque vascularisation and hemorrhage. However, clinical data regarding the value of VEGF as a biomarker of atherosclerosis have been contradicting. We sought to evaluate the association between VEGF and the severity of coronary artery disease assessed by quantitative coronary angiography (QCA).

Methods: In this cross-sectional study, serum VEGF serum concentrations were measured in 168 patients undergoing angiography for acute coronary syndrome (ACS) (n=112) or for stable angina (n=56). QCA was used to determine the cumulative coronary stenosis score (CCSS), which is calculated by adding all percent diameter stenoses. A higher score reflects more severe disease.

Results: Patients with an ACS had lower VEGF serum concentrations than patients with stable angina (182 pg/ml (95% CI 152-211 pg/ml) vs 288 pg/ml (95% CI 232-343 pg/ml), p=0.001). We observed a significant and robust correlation between VEGF concentrations and the CCSS in patients with stable angina (r=0.423 p=0.001). This relationship was not seen in patients with ACS (r=0.010 p =0.920). In a multivariate analysis of patients with stable angina that included classical atherosclerosis risk factors, VEGF remained an independent predictor of the CCSS (p=0.009).

Conclusion: Our study supports the role of VEGF as a potential biomarker of atherosclerosis in patients with stable coronary artery disease.