ASSOCIATIONS OF SERUM CYTOKINES WITH INTRAVASCULAR ULTRASOUND-DERIVED MEASURES OF CORONARY PLAQUE BURDEN AND CLINICAL OUTCOME IN PATIENTS UNDERGOING CORONARY CATHETERIZATION

Poster Contributions
Poster Sessions, Expo North
Sunday, March 10, 2013, 3:45 p.m.-4:30 p.m.

Session Title: Acute Coronary Syndromes: Role of Inflammation
Abstract Category: 1. Acute Coronary Syndromes: Clinical
Presentation Number: 1258-200

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Background: This study aims to investigate associations of emerging cytokine biomarkers with intravascular ultrasound (IVUS)-derived measures of coronary atherosclerosis and with occurrence of cardiac events.

Methods: Between 2008 and 2011, IVUS imaging of a non-culprit coronary artery was performed in 570 patients who underwent coronary catheterization for acute coronary syndrome (ACS) (n=309) or stable angina (n=261). Interleukin-6 (IL6), chemokine C-C ligand (CCL)-2, CCL3, CCL4, CCL5, tumor necrosis factor (TNF)-α and TNF receptor-2 were measured in stored plasma samples.

Results: Higher levels of CCL2 (p=0.002), CCL3 (p=0.042), TNF-α (p<0.001) and lower CCL5 (p=0.025 in patients with ACS) were associated with higher coronary plaque burden. Higher TNF-α was associated with presence of thin-cap fibroatheroma (TCFA) lesions (p=0.006). Lower CCL5 was associated with presence of TCFA lesions with a plaque burden ≥70% (p=0.067). Only CCL5 was independently predictive for the composite endpoints of death, ACS or revascularization (HR per SD increase in ln-RANTES 0.74, 95%CI 0.55-0.99) and for death or ACS (HR 0.64, 95%CI 0.44-0.93) at 400 days of follow-up.

Conclusions: Higher serum CCL2, CCL3, TNF-α and lower CCL5 levels are associated with the extent and a more advanced phenotype of coronary atherosclerosis. CCL5, also known as RANTES, is a promising biomarker that is independently, inversely associated with occurrence of cardiac events, particularly of death and ACS.