Monocyte Chemoattractant Protein-1 Concentration in Coronary Sinus Blood and Severity of Coronary Disease

To the Editor:

We have read the excellent article by de Lemos et al \(^\text{1}\) on the prognostic significance of the monocyte chemoattractant protein-1 (MCP-1) in the long-term clinical outcomes in patients with acute coronary syndromes. Because MCP-1 has been shown to be related to atherosclerosis development,\(^\text{2}\) we measured the concentration of this chemokine in blood drawn from the coronary sinus in a small sample of unstable angina patients (\(n=24\)). All of them had an ejection fraction >50% and no history of current inflammatory diseases, recent (3 months) myocardial necrosis, coronary angioplasty, or bypass surgery (1 year). Coronary angiograms were evaluated separately and blindly by 2 cardiologists, and a score of severity was created by totaling points (0, normal; 1, minimal to 30% stenosis; 2, 50% stenosis; 3, 70% to 90% stenosis; and 4, total occlusion) at 29 predefined arterial segments according to the Bypass Angioplasty Revascularization Investigation (BARI).\(^\text{3}\) The range of scores was 1 to 29 points (12.3±7.4 points [mean±SD]). The values of MCP-1 were between 6.7 and 367.1 pg/mL (124.0±7.4 pg/mL). A Pearson significant correlation was found between the score of coronary disease and MCP-1 (\(R=0.783; P<0.001\)). Furthermore, a multiple regression with the score of coronary disease severity as outcome (dependent variable) showed a \(\beta\) coefficient for MCP-1 of 0.062 (95% CI, 0.034–0.091; \(P<0.001\)) after adjustment for age, gender, arterial hypertension, hypercholesterolemia, diabetes, current smoking, body mass index, and ratio of total cholesterol to high-density lipoprotein cholesterol. The \(R^2\) was 0.789 for the fully adjusted multiple regression model.

MCP-1 concentration in coronary sinus venous blood is likely to reflect precisely what is happening in the coronary wall. Our finding suggests that coronary disease severity depends in part on MCP-1 production by cells in the coronary atheromas. Therefore, we think that this association may help to explain the prognostic significance of MCP-1 concentration in peripheral blood reported by de Lemos et al.\(^\text{1}\)

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