

Haptoglobin Phenotype Does not Predict Coronary Artery Calcification in Diabetic Subjects

Jaffe, Ronen¹; Harari, Emanuel¹; Gaspar, Tamar²; Lewis, Basil¹; Rubinshtein, Ronen¹; Azencot, Mali¹; Lavi, Idit³; Miller-Lotan, Rachel⁴; Levy, Andrew⁴; Halon, David¹

¹Carmel Medical Center, Cardiology, Haifa, Israel; ²Carmel Medical Center, Radiology, Haifa, Israel; ³Carmel Medical Center, Community Medicine and Epidemiology, Haifa, Israel;

⁴Technion-IIT, Bruce Rappaport School of Medicine, Haifa, Israel

Background: Haptoglobin (Hp) 2-2 phenotype predicts increased cardiovascular events in diabetes mellitus compared to Hp phenotypes 1-1 and 1-2. We postulated that diabetics with the Hp 2-2 phenotype would have a higher coronary calcium score than diabetics with other phenotypes.

Methods: Coronary calcium scores were measured by 64-slice computed tomography in 196 subjects with type-2 diabetes and no known heart disease. Haptoglobin phenotype was correlated with calcium scores.

Results: Coronary artery calcification was detected in 79% of the subjects (Agatston score >100 in 46%). Haptoglobin phenotype was 1-1 in 13%, 1-2 in 44% and 2-2 in 43% of the subjects. On multivariate analysis, predictors of coronary calcium score >100 AU were heavy smoking (OR 2.6, 95% CI 1.02-6.8), male sex (OR 2.2, 95% CI 1.2-4.1), statin therapy (OR 2.2, 95% CI 1.1-4.4) and longstanding diabetes (OR 2.0, 95% CI 1.7-3.6). Haptoglobin phenotype did not predict coronary artery calcification .

Conclusions: Coronary artery calcification was associated with with the presence of atherosclerotic risk factors but not with Hp phenotype. The findings suggest that the adverse cardiovascular outcomes in Hp 2-2 diabetics are not related to increased plaque burden.

Increased plaque vulnerability in these subjects may underlie their increased risk for cardiovascular events.