BIOMARKERS OF CORONARY Atherosclerosis VERSUS PERIPHERAL ARTERIAL DISEASE IN TYPE 2 DIABETES MELLITUS

ACC Poster Contributions
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Background: Little is known about the differences in risk factors for coronary artery disease (CAD) vs. peripheral arterial disease (PAD) in type 2 diabetes (T2DM). We evaluated the association of metabolic biomarkers with subclinical CAD and PAD in T2DM subjects.

Methods: A total of 1293 asymptomatic subjects (62.2% men, mean age 58.8 ±9.2) in the Penn Diabetes Heart Study were categorized in three distinct sub-clinical vascular disease phenotypes: No disease, isolated CAD (defined as coronary calcium score >10), and concomitant coronary and peripheral arterial disease (CAD/PAD, defined as coronary calcium score >10 and Ankle Brachial Index <0.9).

Results: Patients with CAD/PAD were older (mean age 61.7 ±8.2) had a higher proportion of hypertension (80.7%, P<0.001), hypercholesterolemia (84%, P<0.05) and metabolic syndrome (78.8 %, P<0.0001). Subjects with isolated CAD had the highest levels of LpPLA2 activity (141.9, IQR=56.1, P<0.01) and LpPLA2 mass (199.7, IQR= P<0.001), whereas subjects with CAC/PAD had the highest level of Lp(a) (26.0, IQR= 59.0, p=0.01) and the lowest level of apoA1(121, IQR=21, p<0.001). In a multivariate analysis Leptin (OR 1.23, p=0.02) increased the odds of isolated CAD. CAD/PAD, but not CAD was associated with leptin (1.94, p= 0.02) and FABP4 (1.98, p=0.02).

Conclusions: In T2DM individuals asymptomatic for cardiovascular disease, the presence (CAD/PAD) is associated with higher levels of biomarkers linked to lipid retention and lower levels of lipoproteins involved in cellular cholesterol efflux, whereas biomarkers of atherosclerotic plaque inflammation are associated with isolated CAD. Among multiple metabolic biomarkers leptin was the only one independently associated with the both subclinical coronary and peripheral arterial disease.