High levels of circulating lipoprotein-associated phospholipase A2, but not oxidized LDL, are associated with severe aortic stenosis; comparison with coronary artery disease


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Purpose: Aortic stenosis (AS) is a disease process akin to atherosclerosis and has been linked to several risk factors for coronary artery disease (CAD). Lipoprotein-associated phospholipase A2 (Lp-PLA2) is an inflammatory biomarker secreted in the atherosclerotic plaque. We hypothesized a relationship between serum Lp-PLA2, plasma oxidized LDL (oxLDL) and AS, in contrast with CAD.

Methods: Between December 2009 and June 2010, from 494 subjects scheduled for diagnostic coronary angiography, we selected 234 patients (71.2% men) included into 2 groups: Group “CAD”: patients with only CAD and Group “AS”: patients with AS and normal coronary arteries. Lp-PLA2 mass was assessed in serum with a Plac®– test turbidimetric immunoassay.

Results: In healthy controls, Lp-PLA2 was 163±43 μg/L (men: 166±45 μg/L; women: 159±39 μg/L, non significant). Lp-PLA2 were significantly higher in patients than in controls (210±49.1 vs 163±60±30, p<0.01). Lp-PLA2 increased in AS-patients, and were not significantly different than CAD-patients (217.3±44.5 vs. 220.4±51.9, respectively; NS). Moreover, Lp-PLA2 levels were similar in patients with single-vessel atherosclerosis (215.2±52.0) but significantly lower than in patients with three-vessel atherosclerosis (251.9±57 μg/L; p<0.05).

oxLDL levels were 42±13 U/L, which was within normal values, oxLDL values were 46±12 and 38±12 U/L for AS-patients and CAD-patients, respectively, (p<0.001). Circulating oxLDL levels were not affected by gender, diabetes or hypertension but were significantly correlated with serum apoB, LDL-cholesterol, triglycerides and ApoA-I. We found no correlation between Lp-PLA2 and oxLDL. Patients on statin treatment had significantly lower LDL-cholesterol, triglycerides and ApoA-I. We found no correlation between Lp-PLA2 and oxLDL.

Conclusion: We report for the first time that high serum levels of Lp-PLA2 were associated with severe AS. This could have practical implications because statins and renin-angiotensin-aldosteron system inhibitors seemed to be a promising treatments of AS.

Impact of chronic obstructive pulmonary disease on long-term prognosis in coronary artery disease


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Purpose: We aimed to assess the long term prognosis associated with COPD in a contemporary large cohort of pts with established CAD.

Methods: 783 consecutive male pts hospitalized in 2001-2004 for coronary artery disease were considered. The median follow-up was 7.17 years. Total mortality was predicted with a Cox proportional hazard model.

Results: Mean age (SD) was 60.2 (8.1), 144 pts (18.4%) were smokers, mean blood pressure was 139/80±30 (11) mmHg and median heart rate was 61 bpm [Interquatile range (IQR) [57-70]. Mean HDL cholesterol was 43 mg/dl (11), mean LDL cholesterol 124 mg/dl (39) and median triglycerides were 147 mg/dl [IQR [109-197]. Mean Cockcroft-Gault creatinine clearance was 87 ml/min and 11 pts (1.4%) had a severe chronic renal failure (lower than 30 ml/min).

Mean left ventricular ejection fraction was 0.53 (0.13), 85.5% were on antiplatelet therapy, 75.2% on beta-blocker, 66% on statin therapy and 54.8% on ACE inhibitors orARB.

Before multivariate adjustment for age, diabetes, tobacco consumption (none, ≤40 pack-years, >40 pack-years), heart rate, left ventricular ejection fraction (>0.5; ≤0.5 and >0.5; ≤0.5; >0.5 and >0.6; ≥0.6), history of stroke, statin therapy and coronary revascularization, hazard ratio for all-cause death was 2.22 (95% CI [1.15; 4.26]) p=0.016) in pts with COPD compared to those without.

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