Abstract:

BACKGROUND: The impact of statin therapy on the association between circulating levels of oxidized low density lipoproteins (OxLDL) and severity of coronary artery disease (CAD) has not been studied.

METHODS: OxLDLs were measured in 687 patients with angiographically proven CAD (320 patients, 46.6% on statin therapy and 367 patients, 53.4% not on statin therapy on admission) using the Mercodia Oxidized LDL Enzyme-Linked Immunosorbent Assay (ELISA).

RESULTS: Patients on statin therapy had lower levels of OxLDL (median [interquartile range]; 63.9 U/L [53.9; 79.8] versus 72.3 U/L [58.4; 86.1], P<0.001) and C-reactive protein (3.0 mg/L [1.2; 6.6] versus 4.0 mg/L [1.7; 13.1], P<0.001) than patients not on statins. Multivariable analysis showed that statin therapy was an independent predictor of lower levels of OxLDL (P=0.0001). In univariate analysis, OxLDL level did not differ significantly among the patients with 1-, 2-or 3-vessel disease (70.5 U/L [57.5; 85.6], 66.3 U/L [53.8; 82.6] and 68.2 U/L [57.0; 83.4], respectively, P=0.26). Multivariable logistic regression analysis showed that OxLDL was an independent correlate of angiographic severity of CAD (P=0.04) and that there was an interaction (P=0.038) between statins and OxLDL in that the increased levels of OxLDL were associated with more extensive CAD.

CONCLUSION: Patients with CAD who receive statins have lower levels of OxLDL and an
attenuation of the relationship between circulating levels of OxLDL and CAD severity compared with patients who do not receive statins.

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