OXIDIZED LDL OUTPERFORMS OTHER LIPID MARKERS AND IS COMPARABLE TO CAROTID INTIMA-MEDIA THICKNESS IN PREDICTING EXTENSIVE PREMATURE CORONARY ATHEROSCLEROSIS

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Background: We compared serum oxidized Low Density Lipoprotein (oxLDL) to other lipid parameters and to common carotid maximal intima-media thickness (CIMT max), as an index of severe premature coronary artery disease (CAD).

Methods: We studied 91 patients, 55 years old, hospitalized for an acute coronary syndrome (93.4%) or stable angina (6.6%). They all had a coronary angiogram and were accordingly divided as having single vessel (n=40) or multi-vessel (n=51) CAD. CIMT max measured by B-mode ultrasound, circulating oxLDL levels measured with sandwich ELISA and usual lipid parameters were compared for differences between the two CAD severity groups by student’s t-test. Parameters found to be significantly different were assessed by receiver operating (ROC) curves for their ability to predict multi-vessel CAD.

Results: Differences between single vessel and multi-vessel CAD groups were significant for CIMT max (0.83±0.11 mm vs 0.90±0.17 mm, p=0.025) and oxLDL (85.28±35.14 U/L vs 109.38±52.01 U/L, p=0.025). However, significant differences were not detected for other lipid parameters tested: total cholesterol, LDL, HDL, triglycerides, nonHDL, apoA, apoB, LDL/HDL and apoB/apoA.

ROC curves for the CIMT max and oxLDL as predictors of multi-vessel CAD were constructed and the areas under the curve (AUC) were similar: AUC = 0.642, p=0.031 for oxLDL and AUC=0.629, p=0.051 for CIMT max.

Conclusions: Circulating oxLDL was comparable to CIMT and outperformed all other lipid parameters as a predictor of multi-vessel disease in our study population. Its role as a biomarker merits further attention, especially concerning premature coronary atherosclerosis.