ABSTRACT

Association of Plasma Oxidized Low Density Lipoprotein (oxLDL) with increased triglycerides level in Omani subjects

*Hamed Al-Riyami, **Mohsen Al-Saleh and [β]Jumana Saleh

Biochemistry Department, College of Medicine, Sultan Qaboos University, Oman
Muscat

Email: *riyami101@gmail.com
**mmtma149@gmail.com

[β]Corresponding: jumanasaleh@hotmail.com

Oxidation of LDL is believed to be a key event in atherosclerosis progression. OxLDL particles are recognized by macrophages forming "foam cells" that develop into fatty streaks initiating atherosclerosis events. *In vitro* studies suggest that small LDL particles are more prone to oxidation than larger buoyant LDL. Formation of smaller LDL particles is often associated with increased triglyceride levels *in vivo*. The aim of the study was to examine *in vivo* levels of oxLDL in hypertriglyceridemic and control subjects, and the association between oxLDL levels and TG levels. Oxidized LDL was measured in 47 (control and hypertriglyceridemic samples) and the correlations of oxLDL with TG, LDL size, apoB, apoA1, Total Chol, HDL-C and LDL-C and glucose were examined. Results showed increased levels of oxLDL in the hypertriglyceridemic group compared to the control group ($p = 0.002$). Although the hypertriglyceridemic individuals in this study had significantly decreased LDL size, LDL size was also *NOT* associated with increased oxLDL levels. Regression analysis showed that apoB was the main predictor of oxLDL levels in plasma ($r = 0.684$, $p < 0.0001$). As oxLDL are the result of covalent binding of apoB with oxidatively modified lipid moieties, this study suggests that apoB is the main determinant of LDL oxidation. In conclusion, decreased LDL size in hypertriglyceridemic subjects was not a significant determinant of oxLDL levels *in vivo*. LDL oxidative modification may be attributed to an oxidative state associated with an abnormal apoprotein profile.