

**EVALUATION OF Ox-LDL ANTIBODIES AS A  
MARKER FOR HIGH RISK OF CORONARY  
ARTERY DISEASE (CAD)**

*Thesis*

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Clinical and Chemical Pathology

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## **ABSTRACT**

In this work in order to evaluate oxidized low density lipoprotein autoantibodies (o-LAB) as a marker for coronary atherosclerotic disease (CAD), lipid profile and o-LAB were assayed in 60 male subjects [who were classified according to their angiographic findings into mild CAD patients (n=17), moderate CAD patients (n=19), severe CAD patients (n=13) and normal control subjects (n=11)]. Total cholesterol (TC) and triglycerides (TG) analysis was done by an enzymatic colorimetric method. High density lipoprotein-cholesterol (HDL-C) was measured after precipitation of low density lipoprotein (LDL) and very low density lipoprotein (VLDL) in serum using phospho-tungstic acid. LDL-C was calculated using Friedwald formula and also TC/HDL-C ratio was calculated. o-LAB assay was done using an ELISA technique.

o-LAB was proved using Kruskal Wallis test to be the parameter which vary most significantly between the four groups, followed by LDL-C, TC and TC/HDL-C ratio. TG and HDL-C showed no statistical variations between the four groups.

Using Wilcoxon rank sum test to compare between each two groups o-LAB was more discriminating between the different degrees of CAD, while TC, LDL-C and TC/HDL-C ratio seemed to be higher in patients with severe CAD.

The results of ROC curve analysis for o-LAB revealed that 180 mU/mL cut off level is the most sensitive and specific point.

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***List of abbreviations***

|                                      |   |
|--------------------------------------|---|
| <b><i>ADP</i></b>                    | <b><i>Adenosine diphosphate</i></b>                           |
| <b><i>BMI</i></b>                    | <b><i>Body mass index</i></b>                                 |
| <b><i>CAD</i></b>                    | <b><i>Coronary atherosclerotic disease</i></b>                |
| <b><i>CAS</i></b>                    | <b><i>Coronary atherosclerotic score</i></b>                  |
| <b><i>CD4</i></b>                    | <b><i>Cluster of differentiation 4</i></b>                    |
| <b><i>CD8</i></b>                    | <b><i>Cluster of differentiation 8</i></b>                    |
| <b><i>CHD</i></b>                    | <b><i>Coronary heart disease</i></b>                          |
| <b><i>EDRF</i></b>                   | <b><i>Endothelial derived relaxation factor</i></b>           |
| <b><i>EGF</i></b>                    | <b><i>Epidermal growth factor</i></b>                         |
| <b><i>FCR</i></b>                    | <b><i>Fractional catabolic rate</i></b>                       |
| <b><i>FGF</i></b>                    | <b><i>Fibroblast growth factor</i></b>                        |
| <b><i>HDL-C</i></b>                  | <b><i>High density lipoprotein-cholesterol</i></b>            |
| <b><i>IDDM</i></b>                   | <b><i>Insulin dependant diabetes mellitus</i></b>             |
| <b><i>IDL</i></b>                    | <b><i>Intermediate density lipoprotein</i></b>                |
| <b><i>LDL-C</i></b>                  | <b><i>Low density lipoprotein-cholesterol</i></b>             |
| <b><i>M-CSF</i></b>                  | <b><i>Monocyte-colony stimulating factor</i></b>              |
| <b><i>MCP-1</i></b>                  | <b><i>Monocyte chemotactic protein-1</i></b>                  |
| <b><i>MM-LDL</i></b>                 | <b><i>Minimally modified low density lipoprotein</i></b>      |
| <b><i>NIDDM</i></b>                  | <b><i>Non-insulin dependant diabetes mellitus</i></b>         |
| <b><i>o-LAB</i></b>                  | <b><i>Oxidized-low density lipoprotein autoantibodies</i></b> |
| <b><i>Ox-LDL</i></b>                 | <b><i>Oxidized-low density lipoprotein</i></b>                |
| <b><i>PDGF</i></b>                   | <b><i>Platelet derived growth factor</i></b>                  |
| <b><i>TC</i></b>                     | <b><i>Total cholesterol</i></b>                               |
| <b><i>TG</i></b>                     | <b><i>Triglycerides</i></b>                                   |
| <b><i>TGF-<math>\beta</math></i></b> | <b><i>Transforming growth factor-<math>\beta</math></i></b>   |
| <b><i>VLDL</i></b>                   | <b><i>Very low density lipoprotein</i></b>                    |



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