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Anti-apolipoprotein A-1 autoantibodies as a risk biomarker for cardiovascular disease in Egyptian patients with type 2 diabetes mellitus

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Aim: Anti-apolipoprotein A-1 autoantibodies (anti-apoA-1 IgG) represent an emerging prognostic cardiovascular marker in patients with myocardial infarction or autoimmune diseases associated with high thrombotic events. The aim of this work was to investigate the incidence of anti-apoA-1 autoantibodies in type 2 diabetes (T2DM) patients with and without cardiovascular disease (CVD) and to study potential association with disease risk and its effect on plasma lipid parameters.

Methods: Qualitative determination of anti-apoA-1 IgG was assayed in sera from 302 subjects classified into T2DM patients (n=102), T2DM+CVD (n=112) and healthy controls (n=88).

Results: The incidence of anti-apoA-1 IgG was significantly higher among CVD patients (35.7%) than T2DM patients (8.8%) or control subjects (6.1%), $p<0.0001$. A significant association with CVD was identified ($p<0.0001$) and subjects who were positive for anti-apoA-1 IgG were at 8.5 times increased risk to develop CVD when compared to controls. Diabetic patients who were positive for the antibodies showed 5.7 times increased CVD risk. ROC analysis indicated anti-apoA-1 IgG as a risk biomarker for CVD in T2DM patients with an AUC value of 0.76, sensitivity of 35.7% and specificity of 91.2%. Studying the effect on lipid parameters, anti-apoA-1 IgG associated with significantly higher serum concentrations of TC and non-HDL-C in all groups and with higher concentrations of LDL-C in diabetic patients and higher TC/HDL-C ratio in CVD patients.

Conclusion: Our results indicate that anti-apoA-1 IgG is a cardiovascular risk biomarker in T2DM patients.

Biography

Dalia Adel Abd-El Haleem has completed her PhD from School of Medicine, Cairo University and Post-doctoral studies from National Research Center, Egypt. She is an Assistant Professor of Clinical and Chemical Pathology. She has published more than 13 papers in reputed journals and has been serving as an Editorial Board Member of repute.

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