Evaluating The Relation Between Serum (Apolipoprotein B, A, Apo B/Apo A Ratio) And Diabetic Retinopathy in Sample of Type 2 Egyptian Diabetic Patient

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ABSTRACT

BACKGROUND

Diabetic retinopathy (DR) is a chronic progressive, potentially sight-threatening disease of the retinal microvasculature associated with the prolonged hyperglycemia and other conditions linked to diabetes mellitus such as hypertension. Most studies to date have shown no association between the traditional serum lipid markers (serum total cholesterol, triglycerides, low density lipoproteins (LDL), and high density lipoproteins (HDL) and DR. novel serum lipid markers(Apo lipoproteins) which are the protein portion of lipoproteins (Apo-A, Apo-B and Apo-B/Apo-A ratio)were recently linked to DR, and observed that the increase in serum Apo-B and high Apo-B /Apo-A ratio associated with increased risk of proliferative diabetic retinopathy.

OBJECTIVES:

To evaluate the relation between novel serum lipid markers (apo B, apo A and apo B/apo A ratio) and various grades of diabetic retinopathy in sample of type 2 Egyptian diabetic patients.

METHODS:

The current study included 80 subjects with type 2 diabetes divided into 3 groups; type 2 diabetic patients with proliferative diabetic retinopathy (group I), type 2 diabetic patients with non- proliferative diabetic retinopathy (group II) and type 2 diabetic patients without retinopathy as control group (group III). fasting plasma glucose (FPG), 2 hour postprandial plasma glucose (2hpp), HemoglobinA1c (HbA1c),Total cholesterol (chol), Triglycerides (TG), low density lipoproteins(LDL), high density lipoproteins(HDL) and and serum Apo lipoprotein A and B level.

RESULTS:

On comparing the three studied groups a statistically significant difference regarding serum apo B, apo B/ A ratio ($p<0.001$*) being higher in group I than group II than group III, also there was a statistical significant difference between them regarding serum apo A ($p=0.010$) being higher in group III thsan group II than group I. There was a statistical significant positive correlation between serum apo B / apo A ratio and diabetic duration ($r=0.248$), htn ($r=0.4$), hba1c ($r=.47$), LDL ($r=0.68$), Triglycerides ($r=0.52$), cholesterol ($r=0.70$), and statistical significant negative correlation between serum apo B / apo A ratio and HDL ($r=0.37$).

CONCLUSION:

Serum apo B, serum apo B / apo A ratio in diabetic patients are higher in the presence of retinopathy, longer disease duration, hypertension duration, triglycerides, total cholesterol, LDL, HDL, it also higher in proliferative than non proliferative diabetic retiopathy. Drawing attention to the possible relationship between the high serum apo B, serum apo B / apo A ratio and the progression of diabetic retinopathy. hypertension duration was the most independent factor affecting B/A ratio. So lowering blood pressure can decrease retinopathy progression and improve prognosis in people with type 2 diabetes especially in the first 4- 5 years.

KEYWORDS:

Serum apolipoprotein B; serum apolipoprotein A , diabetic retinopathy, LDL, HDL, cholesterol, triglycerides

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