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Research Article

**ANALYSIS OF LIPID PROFILE IN DIABETIC PATIENTS
AMONG LOCAL POPULATION OF PAKISTAN**Dr Shoaib Ahmed¹, Dr. Rabiya Ilyas², Dr Iqra Amjad³¹Government General Hospital Samnabad Faisalabad²Pakistan Kidney and Liver Institute Research Center, Lahore³BHU 33/12L Chichawatni, Sahiwal**Article Received:** February 2020**Accepted:** March 2020**Published:** April 2020**Abstract:**

Aims and Objectives: The basic aim of the study is to find the total lipid profile and levels of TG in diabetic patients. **Methodology of the study:** This cross-sectional study was conducted in Jinnah Hospital, Lahore during June 2019 to January 2020. The data was collected from 100 diabetic patients who was suffering from diabetes from last one year. Patients from both genders, age range 35 to 65 was selected for this study. Fasting plasma glucose, serum TC, HDL-C, LDL-C and TG was measured by using Randox kit. **Results:** We found strong positive correlation between severity of DR with BSF, HbA1c, serum LDL-C, TC and TG, whereas, age and duration of DM showed moderately positive correlation with severity of diabetes. **Conclusion:** In our study, strong positive correlation was found between serum TC, TG, LDL-C with both BSF and HbA1c, while HDL-C showed weak negative correlation with both BSF and HbA1c.

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INTRODUCTION:

Diabetes mellitus (DM) has been emerging as a major healthcare problem in Pakistan with 7.0 million people suffering from it and the number of diabetic patients is estimated to rise to a staggering figure of 14.4 million by the year 2040 making Pakistan the 8th highest country in the world in terms of burden of diabetic patients¹. The morbidity and mortality related to DM is mainly attributed to its microvascular complications including retinopathy, nephropathy and neuropathy. Chronic hyperglycaemia, increased reactive oxygen species, decreased nitric oxides and increased fatty acids are responsible for these chronic vascular complications by altering the vascular response². The major ocular complication of DM is diabetic retinopathy (DR) which is the leading cause of irreversible blindness worldwide with prevalence of DR in newly diagnosed type II diabetics up to 40%³. Known risk factors for development and progression of DR include type and duration, age, gender, body-mass index (BMI), glycaemic control, hypertension, nephropathy, smoking, pregnancy and serum lipid levels⁴.

Role of serum lipids in development and progression of DR has been evaluated worldwide with variable results. Diabetic dyslipidemia characterized by elevated serum total cholesterol (TC), triglycerides (TG), low density lipoproteins cholesterol (LDL-C) and high-density lipoproteins cholesterol (HDL-C) has been proposed as possible risk factors for DR⁵. Hyperlipidemia causes endothelial dysfunction due to reduced bioavailability of nitric oxide and breakdown of blood retinal barrier leading to exudation of serum lipids and lipoproteins which

results in DR changes and diabetic macular edema (DME) formation⁶.

Aims and Objectives

The basic aim of the study is to find the total lipid profile and levels of TG in diabetic patients.

METHODOLOGY OF THE STUDY:

This cross-sectional study was conducted in Jinnah Hospital, Lahore during June 2019 to January 2020. The data was collected from 100 diabetic patients who was suffering from diabetes from last one year. After approval by the hospital ethical review committee, informed written consent was taken from the patients prior to inclusion in the study. Patients from both genders, age range 35 to 65 was selected for this study. The pre devised proforma was completed by single researcher endorsing subject's demography, and clinical profile. Fasting plasma glucose, serum TC, HDL-C, LDL-C and TG was measured by using Randox kit.

Statistical analysis

SPSS 17.0 for windows was used for statistical analysis. Descriptive statistics i.e. mean \pm standard deviation for quantitative values (age, duration of DM, BMI, BSF, lipid sub fraction levels and HbA1C) and frequencies along with percentages for qualitative variables (gender, smoking status) were used to describe the data.

RESULTS:

The demographic values show that there is a significant relation between diabetes and hyperlipidemia in a local population of Pakistan. The value of HbA1C is 5.77 ± 0.50 in diabetic patients as compared to normal group. (Table 01)

Table 01: Clinical and biochemical profile of study population.

Variable	Diseased group	P value
Age (years)	48.04 \pm 4.83	0.018
Male, n (%)	71 (50.71%)	0.285
Smoker, n (%)	32 (22.85%)	< 0.01
Duration (years)	4.60 \pm 3.03	0.067
BMI (kg/m ²)	26.31 \pm 2.71	0.418
Plasma Glucose (F) mg/dl	117.34 \pm 7.93	< 0.01
HbA1C (%)	5.77 \pm 0.50	< 0.01

We found strong positive correlation between severity of DR with BSF, HbA1c, serum LDL-C, TC and TG, whereas, age and duration of DM showed moderately positive correlation with severity of diabetes. (Table 2)

Table 02: Lipid sub fraction values among subgroups.

Lipid Profile	Diseased group	P value
Serum Cholesterol (mg/dl)	187.26 \pm 17.46	< 0.01
Serum LDL-C (mg/dl)	92.59 \pm 11.53	< 0.01
Serum HDL-C (mg/dl)	45.63 \pm 4.44	< 0.01
Serum TG (mg/dl)	169.28 \pm 9.83	< 0.01

DISCUSSION:

The current study investigate the relationship of diabetes with lipid profile. Diabetes is a common issue now a days so that we investigate its effect and one prospect is lipid profile. Diabetes is a major cause of mortality globally, and it has been estimated that 400 million people worldwide will suffer from it by 2030⁷. Despite the fact that hereditary qualities seems to assume an essential part in the advancement of diabetes, examine recommends that dietary decisions driven by natural and financial components are of critical significance. Amazing eating regimens assume an essential part in diabetes avoidance⁸. Suitable dietary adherence can enhance insulin affectability and glycemic control, and consequently add to way of life change and general personal satisfaction. Nonetheless, past research recommends that dietary adherence is seemingly among the most troublesome foundations of diabetes administration⁹. Higher HEI scores demonstrate nearer adherence to current dietary rules for singular food and supplement gatherings. For the sufficiency segments, for example, vegetables and natural product, a higher score demonstrates higher utilization. Dietary proposals depend on the useful effects of devouring products of the soil and expressly stress their constructive outcomes of decreasing corpulence and certain sorts of growths. The last three segments of the HEI incorporate refined grains, sodium, and discharge (calories from strong fats, liquor, and included sugars) and a higher score demonstrates bring down utilization¹⁰.

CONCLUSION

In our study, strong positive correlation was found between serum TC, TG, LDL-C with both BSF and HbA1c, while HDL-C showed weak negative correlation with both BSF and HbA1c. Serum cholesterol, LDL-C and TG levels were significantly elevated and serum HDL-C level was decreased in patients with diabetes.

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