Correlation between Blood Sugar Parameters and Lipid Profile Parameters Among Type 2 Diabetes Mellitus Patients

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ABSTRACT:

Background: The relationship between dyslipidemia and diabetes is particularly significant, as hyperglycemia not only induces apoptosis in the β-cells of the islets of Langerhans but also influences the extent of oxidized low-density lipoprotein (LDL) accumulation. Hence; the present study was conducted for assessing correlation between blood sugar parameters and lipid profile parameters among type 2 diabetes mellitus patients.

Materials & Methods: A detail history was taken and a complete physical examination and clinical evaluation of each subject was done and details were entered in the pre-designed proforma. Patients diagnosed as diabetes Mellitus according to ADA criteria were included in the present study. Serum Triglycerides, Total cholesterol and HDL cholesterol were analyzed by enzymatic methods with the help of Glaxo kits on ERBA Chem-5. Serum LDL cholesterol was calculated by Frederickson-Friedwald's formula according to which LDL cholesterol = Total cholesterol - (HDL cholesterol + VLDL cholesterol). VLDL cholesterol (VLDL-C) was calculated as 1/5 of Triglycerides. All the results were recorded in Microsoft excel sheet and was subjected to statistical analysis using SPSS software.

Results: The highest frequency of subjects was in the 51-60 age group (66 subjects, 33.0%) followed by the 41-50 age group (58 subjects, 29.0%).It was revealed that there exist significant correlations between HBa1c and TC ($r = .689$, $p < 0.01$) HBa1c and TG ($r = .581$, $p < 0.01$) and HBa1c and LDL ($r = .579$, $p < 0.01$).

Conclusion: Diabetes mellitus is one of the most serious global health problems.To conclude, the results of this study revealed a strong positive relationship betweenHbA1c and TC, TGs, and LDL, while showing a negative relationship with HDL and FBS, PPBS.

KEY WORDS: Diabetes Mellitus, Lipid, Blood sugar, LDL, HDL