CODEN [USA]: IAJPBB ISSN: 2349-7750

INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES

http://doi.org/10.5281/zenodo.3596911

Available online at: http://www.iajps.com Research Article

ANALYSIS OF THE ASSOCIATION OF LIPID ABNORMALITIES AMONG TYPE II DIABETIC PATIENTS

Dr Rahima Jamil[1], Dr Dur-e-Shewar[2], Dr Yasir Bostaan[3]

[1] King Edward Medical University. Lahore

[2] Fatima Jinnah Medical University, Lahore

[3] Bengbu Medical College, China

Article Received: November 2019 **Accepted:** December 2019 **Published:** January 2020

Abstract:

Aim: *To conclude lipid irregularities in type 2 diabetic patients.*

Study Design: *A descriptive analytical study.*

Place and Duration: *In the medicine Unit II of Services Hospital Lahore for one year duration from May 2018 to May 2019.*

Methods: *The study was performed in 1000 adult patients with type 2 diabetes mellitus were selected form Medical department.*

Results: *The type 2 diabetes mellitus patients mean age was 40 ± 10.56, the age range was 21 to 80 and 38 years was the mean age. 20 years was the mean duration of DM and 6 months to 36 years was the average range. An additional investigation of the outcomes showed that an increase in cholesterol was noticed in (n = 380) 38% of subjects with C.I. 27.98 ± 41.89. Triglycerides raise by 60% (n = 600) in C.I. patients 51.0 ± 64.7. HDL lowered in twenty percent with C.I. (n = 200) cases. LDL increased by 29% (n = 290). 25.7 ± 36.99.*

Conclusion: *The results of this study showed that lipid levels were altered in the majority of patients with type 2 diabetes mellitus.*

Key Words: *Lipids, Type 2 Diabetes Mellitus, Triglycerides, Cholesterol.*

Corresponding author:

Dr. Rahima Jamil,

King Edward Medical University. Lahore

QR code

Please cite this article in press Rahima Jamil et al., ***Analysis Of The Association Of Lipid Abnormalities Among Type Ii Diabetic Patients.,*** *Indo Am. J. P. Sci, 2020; 07(01).*

INTRODUCTION:

There is higher risk of developing vascular diseases in patients of type II diabetes mellitus due to lipids abnormalities[1]. Because of rise in cardiovascular issues in patients with type 2 diabetes, this analysis was held to investigate the relationship between type 2 diabetes and abnormal lipids[2]. Control of diabetes and lipid levels has been shown to be of great benefit for diabetic patients[3]. Recent research has shown that there is a group of subjects who treat aggressively levels of lipid with type II diabetes; In order to prevent cardiovascular diseases and deaths, there is no improvement or even harmful, so it is necessary to review these approaches[4]. This is because of several other influences that are prone to cardiovascular ailment. Despite the currently presence of drugs available, it is not possible to well control the increase in vascular disease risk due to diabetes mellitus type 2, altering endothelial role is an initial cardiovascular disease indicator[5]. Abnormal vasodilatation in response to blood of the normal endothelium and if increase in dilatation occurs results in vascular risk[6]. One analysis found no association between HbA1c and HDL in patients with diabetes[7]. This is because of various control factors for HDL planes[8]. In type 2 diabetes mellitus patients; there are abnormally low HDL cholesterol levels not associated with diabetes control. Insulin resistance and Lipid abnormalities in diabetic patients are critically discussed[9]. In type 2 diabetic patients; Lipid abnormalities are defined as a reduction in very low density lipoproteins, serum triglycerides, high density lipoproteins and low density lipoproteins[10].

Type 2 diabetic patients suffer from avoidable vascular issues if addressed early. It is necessary to evaluate risk factor to reduce long-term complications. It was supposed that silent myocardial events are relatively communal in patients of diabetes mellitus[11]. ETT was recommended in diabetic patients who have no symptoms to detect quiet myocardial ischemia. It was investigated that much food with no physical activity was based on the characteristics of metabolic syndrome. Changes in lifestyle are very important for a healthy lifestyle[12]. Insulin resistance syndrome discussed widely and establish to be related with type 2 diabetes mellitus, where high density lipoprotein is significantly decreased and waist perimeter is great.

MATERIALS AND METHODS:

This descriptive analytical study was performed in the medicine Unit II of Services Hospital Lahore for one year duration from May 2018 to May 2019 in 1000 adult type 2 diabetes mellitus patients. Data were collected in a special proform. The type 1 Diabetic patients and additional causes of hyperlipidemia were abandoned from the analysis. Studies: fasting blood sugar and 2-hour postprandial blood sugar, LFTS, liver function tests and HbA1C. Fasting lipid profile including triglycerides, total cholesterol, low density lipoprotein cholesterol, HDL cholesterol and very LDL cholesterol. Estimated fasting lipid profile values are; <200 mg / dl, Desired total cholesterol, <150 mg / dl triglycerides, <40 mg / dl high density lipoprotein cholesterol, almost optimal low density lipoprotein cholesterol <130 mg / dl. (ATP Guideline 3) The results obtained were analyzed in SPSS 18.

RESULTS:

The type 2 diabetes mellitus patients mean age was 40 ± 10.56, the age range was 21 to 80 and 38 years was the mean age. 20 years was the mean duration of DM and 6 months to 36 years was the average range.

TABLE I: TYPE 2 DIABETES MELLITUS AND DYSLIPIDAEMIA (n=1000)

Lipids	No. of patients	95% C.I.
Raised cholesterol	380 38%	28.2 – 42.2
Raised triglyceride	600 60%	51.0 – 64.7
Decreased HDL	200 20%	14.1 – 24.7
Increase LDL	290 29%	25.7 – 37.0

The male patients mean age was 41 (n = 410), 35 + 11.2 years, 21 ± 80 years and 36 years. An additional investigation of the outcomes showed that an increase in cholesterol was noticed in (n = 380) 38% of subjects with C.I. 27.98 ± 41.89. Triglycerides raise by 60% (n = 600) in C.I. patients 51.0 ± 64.7. HDL lowered in twenty percent with C.I. (n = 200) cases. LDL increased by 29% (n = 290). 25.7 ± 36.99. (Table I).

DISCUSSION:

The hyperglycemia, which reduced lipid abnormalities, low-density lipoproteins, and high triglycerides, it decreased insulin resistance and HDL 2b and raised 3b and 3c. It has been suggested that high levels of lipids in food are risk factors for vascular diseases[12]. This issue can be managed by educating patients; in an adult educational study, sugars were also controlled by 20% and total cholesterol and low-density lipoproteins by 30%. In another study, uncontrolled diabetes was associated with more vascular complications (macro and micro) and was associated with extended diabetes duration, weight gain, and poor compliance and raised blood pressure[13]. Vascular complications were myocardial infarction, cerebrovascular accident and ischemic heart disease. Our analysis showed that 39% of patients with type 2 diabetes had high cholesterol levels[14].

This means that diabetic patients are prone to develop cardiovascular and cerebrovascular complications in the future. There was a 4.4% correlation between malignancy and low-density cholesterol. Malignant neoplasms commonly seen in diabetes mellitus type 2 include liver, prostate, colorectal, pancreas and breast. Total triglycerides and cholesterol in type 1 diabetic subjects are comparative to HbA1C, which indicates the better metabolic control importance for early diabetic cases[15]. The main cause for uncontrolled type 2 diabetes patients not achieving the desired goalmouths may be decreased education and desire Blood sugar fasting. Reasonable diabetes education is needed to ensure acceptable control. High cholesterol control in diabetes has enhanced in recent years and more studies are needed. Insulin resistance is an important factor in diabetes mellitus type II patients. Through the media, if it can raise consciousness of the diabetes mellitus complications, blood glucose levels can be controlled tightly, leading to better lipid levels control, resulting in minimum coronary artery disease and extra problems.

CONCLUSION:

The results of this analysis proved that most of the patients of type 2 diabetes mellitus has abnormal lipid levels and d blood glucose levels.

REFERENCES:

1. Frazier, Rebecca, Rupal Mehta, Xuan Cai, Jungwha Lee, Sara Napoli, Timothy Craven, Jennifer Tuazon et al. "Associations of Fenofibrate therapy with incidence and progression of CKD in patients with type 2 diabetes." *Kidney International Reports*4, no. 1 (2019): 94-102.
2. Jende, Johann ME, Jan B. Groener, Christian Rother, Zoltan Kender, Artur Hahn, Tim Hilgenfeld, Alexander Juerchott et al. "Association of Serum Cholesterol Levels With Peripheral Nerve Damage in Patients With Type 2 Diabetes." *JAMA network open* 2, no. 5 (2019): e194798-e194798.
3. Malik, Syeda Umme Fahmida, Zabed Mahmud, Jahangir Alam, Mohammad Shahidul Islam, and Abul Kalam Azad. "Relationship among obesity, blood lipids and insulin resistance in Bangladeshi adults." *Diabetes & Metabolic Syndrome: Clinical Research & Reviews* 13, no. 1 (2019): 444-449.
4. Azad, Abul Kalam, Sumudu Setunge, Shahjada Selim, Shahabul Huda Chowdhury, Mohammad Ferdousur Rahaman, Md Abdul Jalil Chowdhury, Barbora de Courten, Dragan Ilic, and Md Nazmul Karim. "Dyslipidaemia as a risk factor for erectile dysfunction in type 2 diabetes mellitus patients." *Diabetes & Metabolic Syndrome: Clinical Research & Reviews* 13, no. 1 (2019): 748-753.
5. Kosmeri, Chrysoula, Ekaterini Siomou, Antonios P. Vlahos, and Haralampos Milionis. "Review shows that lipid disorders are associated with endothelial but not renal dysfunction in children." *Acta Paediatrica* 108, no. 1 (2019): 19-27.
6. Poolsup, Nalinee, Naeti Suksomboon, Putu Dian Marani Kurnianta, and Kulchalee Deawjaroen. "Effects of curcumin on glycemic control and lipid profile in prediabetes and type 2 diabetes mellitus: A systematic review and meta-analysis." *PloS one* 14, no. 4 (2019): e0215840.
7. Kumar, S. Ashwin, PV Krishnam Raju, K. V. T. Gopal, and T. Narayana Rao. "Comorbidities in lichen planus: A case–control study in Indian patients." *Indian dermatology online journal* 10, no. 1 (2019): 34.
8. Begum, A., Irfan, S.R., Hoque, M.R., Habib, S.H., Parvin, S., Malek, R., Akhter, S., Sattar, S. and Sarkar, S., 2019. Relationship between HbA1c and Lipid Profile Seen in Bangladeshi Type 2 Diabetes Mellitus Patients Attending BIRDEM Hospital: A Cross-Sectional Study. *Mymensingh medical journal: MMJ*, *28*(1), pp.91-95.
9. Bojanin, D., Vekic, J., Milenkovic, T., Vukovic, R., Zeljkovic, A., Stefanovic, A., Janac, J., Ivanisevic, J., Mitrovic, K., Miljkovic, M. and Spasojevic-Kalimanovska, V., 2019. Association between proprotein convertase subtilisin/kexin 9 (PCSK9) and lipoprotein subclasses in children with type 1 diabetes mellitus: Effects of glycemic control. *Atherosclerosis*, *280*, pp.14-20.

10. Takahashi, Go, Hirokazu Honda, Keiko Takahashi, Misa Ikeda, Nozomu Hosaka, Hiroaki Ogata, Fumihiko Koiwa, Kanji Shishido, and Takanori Shibata. "Truncal Adiposity Influences High-Density Lipoprotein Cholesterol Levels and Cardiovascular Events in Hemodialysis Patients." *Journal of Renal Nutrition* 29, no. 3 (2019): 235-242.
11. Yan, H., Cheng, L., Jia, R., Yao, H., Wu, H., Shen, Y., Zhang, Y., Hao, P. and Zhang, Z., 2019. ATP-binding cassette sub-family a member1 gene mutation improves lipid metabolic abnormalities in diabetes mellitus. *Lipids in health and disease*, *18*(1), p.103.
12. Mashnafi, S., Plat, J., Mensink, R.P. and Baumgartner, S., 2019. Non-cholesterol sterol concentrations as biomarkers for cholesterol absorption and synthesis in different metabolic disorders: A systematic review. *Nutrients*, *11*(1), p.124.
13. Jayanthi, R., & Srinivasan, A. R. (2019). Sex hormone independent associations between insulin resistance and thyroid status–a gender based biochemical study on clinically euthyroid non-obese, overweight and obese type 2 diabetics'. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews*, *13*(3), 2286-2291.
14. Reginato, Elisa, Roberto Pippi, Cristina Aiello, Emilia Sbroma Tomaro, Claudia Ranucci, Livia Buratta, Vittorio Bini, Giulio Marchesini, Pierpaolo De Feo, and Carmine Fanelli. "Effect of Short Term Intensive Lifestyle Intervention on Hepatic Steatosis Indexes in Adults with Obesity and/or Type 2 Diabetes." *Journal of clinical medicine* 8, no. 6 (2019): 851.
15. Gourgari, Evgenia, Junfeng Ma, Martin P. Playford, Nehal N. Mehta, Radoslav Goldman, Alan T. Remaley, and Scott M. Gordon. "Proteomic alterations of HDL in youth with type 1 diabetes and their associations with glycemic control: a case–control study." *Cardiovascular diabetology* 18, no. 1 (2019): 43.