International Journal of Current Advanced Research
ISSN: O: 2319-6475, ISSN: P: 2319-6505, Impact Factor: 6.614
Available Online at www.journalijcar.org
Volume 7; Issue 6(D); June 2018; Page No. 13345-13346
DOI: http://dx.doi.org/10.24327/ijcar.2018.13346.2375

Research Article

A STUDY OF LIPID PROFILE IN DIABETES MELLITUS TYPE-2 PATIENTS

Reena Jain[1.], Pankaj Jain[2*] and Rachit Saxena[3]

[1,3]Government Medical College, Bhilwara
[2]JLN Medical College, Ajmer

A R T I C L E I N F O

Article History:

Received 11th March, 2018
Received in revised form 6th April, 2018 Accepted 26th May, 2018
Published online 28th June, 2018

Key words:

Lipid Profile, Diabetes Mellitus -2, Mortality.

A B S T R A C T

Backgroud- Diabetes is one of the highly prevalent diseases around the world. Along with its complications, diabetes is a significant cause of morbidity and mortality as well as an increased burden to the health sector's economy.
Methods- This is a cross sectional case control study. 30 patients of type 2 diabetes mellitus and 30 age and sex matched healthy controls were taken. Lipid profile were done in cases and controls using appropriate tests.
Results- There was significant difference in mean HDL, Triglycerides level in diabetic and control patients ($p<0.05$). There was no significant difference in LDL, Cholesterol level in Diabetic and control patients ($p>0.05$).
Conclusion- We therefore conclude that there is a high prevalence of high degree of elevated lipid and lipoprotein levels among the diabetic patients showing that they are more prone to these abnormalities,

INTRODUCTION

Diabetes is one of the highly prevalent diseases around the world. Along with its complications, diabetes is a significant cause of morbidity and mortality as well as an increased burden to the health sector's economy[1]. According to the International Diabetes Federation Diabetes Atlas, it is estimated that about 194 million people had diabetes in the year 2003 and about 2/3rd of the people lived in developing countries[2].

In India, the number of diabetic patients is so high that it is no more considered an epidemic but in fact a pandemic. According to the International Journal of diabetes in Developing Countries, India is considered to be the Diabetic capital of the world. The International Diabetes Federation estimates that the number of diabetic patients in India has doubled from 19 million in 1995 to 40.9 million in 2007 and it is projected to increase to 69.9 million by 20252,[3]. Some studies in India have shown a threefold rise in the diabetic prevalence in rural as well as the urban areas[4,5].

MATERIALS AND METHODS

From the patients admitted 30 representative cases with H/O Type 2 DM are taken as subjects for the study. Age and sex matches 30 nondiabetic are taken as controls. The diagnosis of diabetes is based on revised criteria according to consensus panel of experts from the National Diabetes Data Group and WHO.

Corresponding author:* **Pankaj Jain
JLN Medical College, Ajmer

Inclusion Criteria
Patients with Type 2 DM.
Exclusion Criteria

Type 2 diabetes patients with concomitant diseases or condition affecting the lipid levels such as hypothyroidism, on lipostatic drugs, and thiazides.

Method of data collection

The blood sample of diabetes patients including controls group was taken after fasting for 10-12 hours. 7-10ml of venous blood was drawn from the anticubital vein by aseptic technique in plain vial. Serum was separated from the collected sample for biochemical analysis. Lipid profile investigations that included serum cholesterol, triglyceride, High density lipoprotein cholesterol (HDLcholesterol) and Low density lipoprotein cholesterol (LDL-cholesterol) were carried out on a semi automated analyzer using standard kits. Statistical analysis was done using SPSS software (version 20). T-test was used for the comparison of two groups.

Lipid profile measured following methods

1. Serum total cholesterol: was measured by Enzymatic method Normal serum cholesterol: 150-250 mg/dl
2. Serum HDL cholesterol: was measured by "Phosphotungstate method. Normal HDL – Cholesterol: 30 – 70 mg/dl.
3. Serum LDL cholesterol: If the value of Triglycerides is known, LDL-cholesterol can be calculated based on Friedewald‟s equation.

4. Serum Triglycerides: was measured by enzymatic colorimetric method Normal Serum Triglycerides: Male: 60-165 mg/dl Female: 40-140 mg/dl.

RESULTS

This was a cross sectional, case control, hospital based study on 30 type 2 diabetes mellitus patients attending in OPD with equal number of age and sex matched controls.

Mean age in diabetic patients was 48.56± 9.24 years and control patients was 50.60± 8.74 years and age range was 20-65 years. Both groups were well matched for age and sex distribution.

Table 1 Comparision of biochemical parameters in case and controls.

Parameters	Case (n=30)	Control (n=30)	p-value
Mean Total cholesterol	164.32 ± 42.20	158.20 ± 26.50	>0.05
Mean LDL	94.50 ± 29.80	92.40± 30.20	>0.05
Mean HDL	32.40 ± 9.80	52.80± 11.80	<0.05
Mean Triglycerides	180.60± 58.70	138.40 ± 24.30	<0.05

There was significant difference in mean HDL, Triglycerides level in diabetic and control patients ($p<0.05$) there was no significant difference in LDL, Cholesterol level in Diabetic and control patients ($p>0.05$).

DISCUSSION

Mean age in diabetic patients was 48.56± 9.24 years and control patients was 50.60± 8.74 years and age range was 20-65 years. These values were similar to those reported by Kumar et al [6].

This study also demonstrates the typical diabetic dyslipidemia which is characterized by low HDL, high triglyceride. Various national and international epidemiological studies on lipid profile have also shown this pattern of dyslipidemia.[7-8]

No significant difference was observed in total cholesterol and absolute LDL levels in cases and controls in this study. Even if the absolute concentration of LDL cholesterol is not significantly increased; there is typically a preponderance of smaller, denser LDL particles, which possibly increases atherogenicity (atherogenic dyslipedemia). These changes are due to increased free fatty acid flux secondary to insulin resistance.[9]

CONCLUSION

We therefore conclude that there is a high prevalence of high degree of elevated lipid and lipoprotein levels among the diabetic patients showing that they are more prone to these abnormalities

References

1. Magnesium and HbA1C in Diabetic Patients along with Changes in their Lipid Profiles. *Indian Journal of Clinical Practice;* 2013;23(11):717-719.
2. . International Diabetes Federation (IDF), 2003. Access to Insulin. A report on the IDF Insulin task Force on Insulin 1994-1997.
3. American Diabetes Association (ADA). Standards of Medical care in diabetes. *Diabetes Care* 2007;30:4-41.
4. Ebrahim S, Kinra S, Bowen L, Andersen E, Ben-Shlomo Y. The effect of the rural to urban migration on obesity and diabetes in India: A cross-sectional study. PLos Med 7(4):e1000268.doi:10.1371/journal.pmed.1000268.
5. Mohan V, Deepa M, Deepa R, Shanthirani CS, Farooq S. Secular trends in the prevalence of diabetes and impaired glucose tolerance in urban south India – The Chennai urban rural epidemiology study (CURES-17). *Diabetalogia* 2006;49:1175-78.
6. Kumar A, Kulshrestha M, TripathiA, Sharma M and Kartikeya. A study of correlation between carotid intima - media thickness and diastolic dysfunction in asymptomatic type 2 Diabetics. *IJCMR*. 2016;3:1458-1460.
7. Krauss RM. Lipids and lipoproteins in patients with type 2 diabetes. *Diabetes Care.* 2004;27:1496–504.
8. Witztum JL, Steinberg D. Role of oxidized low density lipoprotein in atherogenesis. *J Clin Invest.* 1991;88:1785– 92.
9. UK Prospective Diabetes Study (UKPDS) Group. Intensive blood-glucose control with sulphonylureas or insulin compared with conventional treatment and risk of complications in patients with type 2 diabetes (UKPDS 33). *Lancet*. 1998;352:837–853.

How to cite this article:

Reena Jain *et al* (2018) 'A Study of Lipid Profile in Diabetes Mellitus Type-2 Patients', *International Journal of Current Advanced Research,* 07(6), pp. 13345-13346. DOI: http://dx.doi.org/10.24327/ijcar.2018.13346.2375

****