



CODEN [USA]: IAJ PBB

ISSN: 2349-7750

INDO AMERICAN JOURNAL OF PHARMACEUTICAL SCIENCES

Available online at: <http://www.iajps.com>

Research Article

AN OBSERVATIONAL RESEARCH TO INVESTIGATE LIPID PROFILE AMONG T2DM PATIENTS AT SIR GANGA RAM HOSPITAL, LAHORE

¹Abdul Manan, ²Ahmad Abdul Rehman Khan, ²Muhammad Zil E Rehman Shah
¹DHQ Hospital Muzaffargarh, ²Nishtar Hospital Multan.

Article Received: March 2019

Accepted: April 2019

Published: May 2019

Abstract:

Background: Diabetes mellitus is a disorder having consequences for glucose and lipid profile.

Objective: To investigate and look at the example of dyslipidaemia in male and female patients of type 2 diabetes.

Patients and Methods: This research was carried out at Sir Ganga Ram Hospital, Lahore from August 2017 to April 2018. An aggregate of hundred analyzed instances of type 2 diabetes was arbitrarily chosen for the study. The individuals who had hyperlipidaemia because of optional causes, for example, nephrotic disorder, hypothyroidism and medications and so forth were barred. Blood tests were taken for fasting and arbitrary sugar and fasting lipid profile. For measurable examination understudy "T" test at 5% dimension of essentialness was connected.

Results: The female patients were observed to be overweight and hypertensive and they had uncontrolled hyperglycemia too. Their systolic circulatory strain was 150 ± 25.75 mm/Hg and diastolic B.P was 90.6 ± 17.6 mm/Hg. The mean blood glucose focus was 246.64 ± 105 mg/dL. The mean fixation of lipids was essentially raised among females when contrasted with guys. On the whole in female patients the estimations of LDL-C, triglycerides and HDL-C was 191 ± 31.81 mg/dL, 179 ± 93 mg/dL and 32 ± 2.4 mg/dL individually, all in high hazard go. LDL: HDL proportion was 6.0. Despite the fact that in male patients the mean fixation of LDL was 174 ± 41 mg/dL and it was in high hazard classification, however, HDL-C was fringe (35.2 mg/dL), and triglycerides were inside the typical range. LDL: HDL proportion was additionally inadequate range.

Conclusion: The female diabetics were hypertensive, overweight and had more uncontrolled hyperglycemia alongside dyslipidaemia when contrasted with a male. The example of dyslipidaemia found in these female patients was an increment in LDL- Candstrikingly diminished HDL-C level.

Keywords: Gender, Dyslipidaemia, type 2 diabetes.

Corresponding author:

Abdul Manan,
DHQ Hospital Muzaffargarh.

QR code



Please cite this article in press Abdul Manan et al., *An Observational Research to Investigate Lipid Profile among T2dm Patients at Sir Ganga Ram Hospital, Lahore., Indo Am. J. P. Sci, 2019; 06(05).*

INTRODUCTION:

Diabetes mellitus is a disorder with unseemly hyperglycemia and confused digestion because of imperfection in insulin creation or insulin obstruction. This ailment isn't just an issue for the individual yet it is likewise considered to have a social effect in creating nations on account of its inconveniences, mortality and cost. It is as of late evaluated that in excess of 180 million individuals are influenced by diabetes worldwide and this number is probably going to be more than twofold constantly 2025. Pakistan positions 7th on diabetic commonness list with 7 million diabetic population [1]. This display is progressively evident in the event that we consider the way that practically 80% of death in such patients occur in creating nations due to macrovascular intricacies like coronary illness and stroke [3]. The focal neurotic system prompting these entanglements is atherosclerosis and it is quickly quickened due to dyslipidaemia. In spite of the fact that grouping of hazard factors like heftiness, hypertension and absence of physical movement have been usually found in diabetes, yet dyslipidaemia has free job prompting CHD [4, 5].

Dyslipidaemia has been found as a major pervasive hazard factor in over half of diabetic patients with C.H.D' this worldview has been portrayed by American diabetic relationship as hypertrigly-ceridermia or reduction in HDL cholesterol. In addition LDL particles found are more atherogenic on the grounds that they are effectively glycosylated and defenceless to oxidation [7]. An issue of intrigue is the commitment of any previously mentioned segment to CHD as any segment can be autonomously atherogenic. A few universal examinations have demonstrated that diabetes disposes of the typical sexual orientation hole in mortality and may initiate atherogenesis alongside dyslipidaemia to a more noteworthy degree in females than guys. So ladies with diabetes have multiple times more danger of CHD and stroke than ladies without diabetes [8]. Specifically, ladies have more awful anticipation after myocardial localized necrosis than their male partners.

Despite the fact that a great deal of work has been done on lipids yet the idea of driving this article emerges from the way that females are dismissed area of our general public.

The present examination tries to think about the typical lipid parameters in local diabetic guys and females and to evaluate if these dimensions adjust or contrast with patterns definitely known globally.

This examination was led to assess the serum sugar and lipid profile among male and female diabetic patients of the restorative unit.

PATIENTS AND METHODS:

This research was carried out at Sir Ganga Ram Hospital, Lahore from August 2017 to April 2018. One hundred analyzed instances of type 2 diabetes including level with a number of guys and females, and between the age of 30-70 years, were haphazardly chosen for the study. History and clinical examination were recorded on each perform in the wake of taking educated assent. Those with B.P > 140/90 mm! Hg took twice or those on enemies of hypertensives were opposed as hypertensive. Fasting blood tests were gathered after medium-term quick, centrifuged inside 15 minutes of venipuncture and lipid levels were dictated by methods for ELISA (Randox Lab). The convergence of LDL-C was determined by utilizing the Friedwald equation $LDL.C = TC - HDLC$ Serum sugar fasting and arbitrary was controlled by enzymatic shading test on a spectrophotometer. All these gathered information were nourished and investigated through PC programming SPSS. Diverse frequencies were determined and introduced in a classified structure. Mean estimations of quantitative information were exhibited as mean \pm SD (standard deviation). Understudy "T" test was connected for lipid levels and qualities were tried at 5% importance dimension. Based on history and physical examination, those patients experiencing incessant liver sickness, nephrotic disorder, hypothyroidism and pregnancy were prohibited. Patients with a history of preventative pills, beta blockers and thiazide diuretics were likewise prohibited.

Current American Diabetic Association and NCEP ATP-111 rules were utilized to arrange lipoproteins in various hazard categories.[10,7] The qualities used to characterize low, fringe and high hazard LDL-C were <100mg/dL, 100-129 mg/dL and >130 mg/dL individually. Cut off estimations of triglycerides were <200 mg/dL. For HDL esteems in men, the high hazard, fringe and okay were <35 mg/dL, 35-45 mg/dL and > 45 mg/dL individually and for ladies, the cut off focuses were <45mg/dL, 45-55 mg/dL and > 55mg/dL separately. With respect to HDL proportion, a marker of cardiovascular ailment, for men, the satisfactory proportion is 4.5 or underneath and for ladies, it is 4.0 or beneath. It is essential that LDL: HDL proportion is more unadulterated proportion than TC: HDL proportion, as HDL is measure good cholesterol' and LDL is the proportion of 'awful cholesterol' [11].

RESULTS:

Information of hundred patients of type 2 diabetes was dissected. An examination of clinical and statistic parameters of subjects appears table I. This table shows trademark differential highlights by

sexual orientation. Females were observed to be hypertensive and overweight. Systolic pulse was ± 21.29 mm!Hg in male and 150 ± 25.75 mm!Hg in females, while diastolic B.P was 80.21 ± 13.38 mm!Hg and 90.6 ± 17.6 mm Hg separately.

Table – I: Features of patients based on the sex distribution

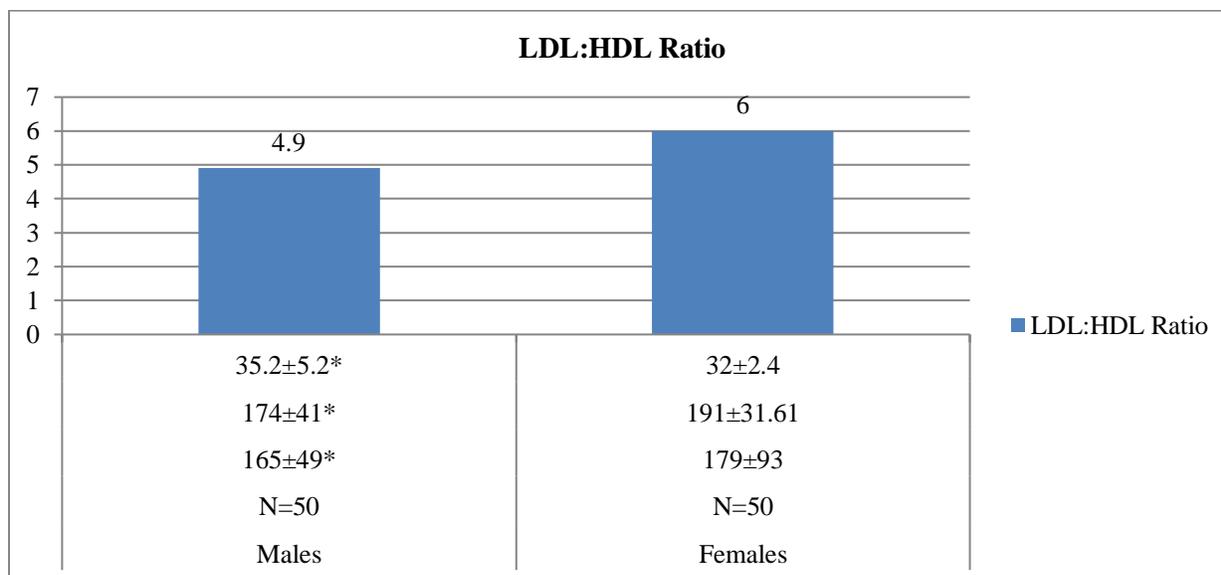
Variables	Male	Female
Systolic blood pressure	135.71 \pm 21.29	150 \pm 25.75
Diastolic blood pressure	80.21 \pm 13.38	90.6 \pm 17.6
Blood glucose (mg%)	228.57 \pm 101.6	246.64 \pm 105.66
Weight (kg)	54.39 \pm 10.14	60.37 \pm 14.75

The mean blood glucose level in guys was 228.57 ± 101.6 mg/dL and 246.64 ± 105 mg/dL in females. The two groups indicating poor glycemic

control, yet females had progressively uncontrolled hyperglycemia and furthermore hypertensive when contrasted with guys.

Table – II: Mean and standard deviation of lipid concentrations in both sexes

Lipid concentrations (mg/dl)	Males N=50	Females N=50
Triglycerides	165 \pm 49*	179 \pm 93
LDL-C	174 \pm 41*	191 \pm 31.61
HDL-C	35.2 \pm 5.2*	32 \pm 2.4
LDL: HDL Ratio	4.9	6.0



A table. II demonstrates the near estimations of lipoproteins among male and female subjects. In female patients the mean estimations of LDL-C and HDL-C was 191 ± 31.6 mg/dL (T-value=-2.01 noteworthy) and 32 ± 2.4 mg/dL {T-Value=-23.57 all-around exceptionally huge) individually. The two qualities were in high hazard class. LDL: HDL

proportion was 6 and fundamentally raised.

In male patients the mean fixation of LDL-C was 174 ± 41 mg/dL {T-value=13.2) and it was in high hazard classification while HDL-C was fringe 35.2 mg/dL{T-Value=-6.53).

In females LDL: HDL proportion was fundamentally in high hazard class (6.0), and it gives helpful extra data as predictor of CHD, while in guys, LDL: HDL proportion was (4.9). The mean groupings of triglycerides were 165 ± 49 mg/dl in male and 179 ± 93 among females.

DISCUSSION:

In spite of advances in counteractive action and the board, dyslipidaemia has an alarmingly noteworthy relationship in female diabetic patients and have been alluded as "Terrible partner H. This worldview intensifies its coronary hazard working together with other customary hazard factors like age, stoutness and uncontrolled hyperglycemia. The present examination is an exceptional work of fundamental significance for this locale of South Punjab and it demonstrated striking discoveries. With respect to as the gauge parameter are concerned, our examination obviously shows that females are hypertensives and overweight than guys and they had uncontrolled hyperglycemia too. It is beneficial here to contrast and a huge populace based study directed by Shera AS [12]. They have portrayed valuable cutting-edge database data. As per their amazing report, 79% of diabetic females and 25% of guys were overweight. Essentially 70% of females had controlled hyperglycemia and observed to be hypertensive also.

Our benchmark results are likewise in conformity with those revealed by Talat Naheed et al [13] and Sohail Rafiq et al. [14]. They have inferred that females had poor glycemic control and they were heavier and hypertensive when contrasted with male diabetics. Especially after menopause, the diabetic females create atherosclerosis a lot quicker. This may clarify the four overlaps expanded danger of coronary illness and stroke in diabetic females [15].

With respect to the example of lipoproteins, our female diabetic patients had fundamentally raised dimension of serum LDL, exceptionally low HDL-C and expanded LDL: HDL-C proportion, all in high hazard run. In male patients, despite the fact that the LDL was raised however different lipoproteins ended up being inside a typical range. Our discoveries are tantamount to global cut off qualities in diabetics as decided by ADA and NCEP ATP-III. As per their proposals, HDL-C ought to be basically more than 45mg/dL for diabetic ladies and more than 35mg/dL for diabetic men. In addition, LDL-C ought to be underneath 100mg/dL [7, 10].

Considering the previously mentioned rules, our discoveries were obviously in high hazard run. Taking this point of view our outcomes are likewise

checked by a few expansive longitudinal preliminaries. UKPDS, with the mean to look at lipoproteins among type 2 diabetics, demonstrated that LDL-C was raised and HDL-C was low in diabetic females when contrasted with male partners. Clearly, these patients had raised LDL: HDL proportion too. By and by the aftereffects of UKPDS have helpful worth. Comparative outcomes were made by Bhatti SM et al. [16]. Their female diabetic patients had a general example of dyslipidaemia as raised LDL-C ($143 \text{ mg} + 32 \text{ mg/dL}$) and HDL-C levels ($39 \pm 4 \text{ mg/dL}$), both in high hazard class, which triglyceride inside ordinary breaking points. The outcomes don't generally hold the equivalent for comparative populace group. Our information is rather than those as of late revealed by Riffat Sultana et al. [17]. Their female patients have demonstrated typical LDL levels (103mg/dL) and HDL in marginal range (45mg/dL). Our finding of hypercholesterolemia and low HDL-C is additionally upheld by Shahid Habib et al. [18]. They have assessed the abnormal state of LDL (3.3 mmol/dL), diminished HDL ($0.9 \pm 0.4 \text{ mmol/dL}$) and marginal triglycerides ($2 \pm 0.3 \text{ mmol/dL}$) in diabetic females when contrasted with guys while lipid profile was equivalent in non-diabetic guys and females. The opportunity has already come and gone to consider the consequences of a universal Swedish examination in light of the fact that these real preliminaries give proof based way to deal with making suggestions. In this extensive populace partner, it was inferred that 80% of a female diabetic had an example of dyslipidaemia as diminished HDL and expanded LDL-C levels [19].

Moreover, some universal observational examinations have appeared noteworthy end that HDL-C is progressively visiting hazard factor for CHD in ladies than high LDL-C [20]. Almost the majority of the above revealed ponders have considered significant clinical enthusiasm uniting to a bringing together thought that in diabetic females decline HDL-C increasingly visits an example of dyslipidaemia pursued by expanded HDL-C levels.

Restriction of our investigation was little example estimate and dependent on single ward information. Also, a bunch of hazard components ought to have been investigated. Further longitudinal examinations are required in South Punjab whether our discoveries can be summed up.

CONCLUSION:

In this examination, we have discovered that diabetic females had expanded LDL and diminished HDL levels alongside expanded LDL: HDL proportion.

They additionally had hypertension and uncontrolled hyperglycemia when contrasted with guys. Indeed this example of dyslipidaemia has a solid association with macrovascular complexities. The human services specialists ought to consider the females as essential concentration for exhorting dynamic way of life, heart sound eating routine and standard utilization of statin and ideal glycemic control.

REFERENCE:

1. SE Manley. SEUKPDS 27. Plasma Lipids and Lipoproteins. At diagnosis of NIDDM by age and sex. *Diabetes care* 1997;20(11):1683-7.
2. Bhatti SM, Dhaka's, Khan MA. Trends of lipid abnormalities in Pakistani Type 2. *Diabetics a tertiary care centre data. PakJMed Sci* 2009;25(6):883-889.
3. Sultana Riffat Perveen Nergis. Study of lipoprotein pattern as an atherogenic factor in type 2 DM *J Med Sci* 2011 April; 19(2):70-73.
4. Habib S, Aslam. M, Hameed Wet al. Gender difference in lipoproteins in healthy and diabetics *Pak J Physio* 2005;1(1-2).
5. Eriksson Metal. Blood lipids in 75,048 type 2 patients. A survey from the Swedish national diabetic population (2011). *European I of CV disease* 18(1):97-105.
6. UK HDL-C consensus group. Role of fibrates in reducing the coronary risk a UK consensus *Curr Med Res Opin.* 2004;20(2) :241-7.
7. Bell D.S.H et al. Impact of diabetic dyslipidaemia diabetes, obesity and metabolism. 2011 (13);313-32.
8. American Diabetic Association: position statement. *Diabetes Care* 2011 Jan;34: sup. I. S1-S2. 511-567.
9. Dale AC, Nilsen, Vattel et al. Diabetes and risk of fatal CHD by gender. 18 years follow up of 74914 individuals. The Hunt Study. *Eur Heart J.* 2007; 28:2924-2929.
10. Mosca L et al. Evidence based guidelines for cardiovascular disease prevention in women. *Jam Coll Cardiol*2007 March;49{1):1230-1250.
11. Grundy SM et al. Implications of National Cholesterol Education programme ATP-III Guidelines. *Circulation*2004;11(2) 227-239.
12. Special communication. ATP-III executive summary NCEP. To evaluate LDL: HDL ratio as a valuable and standard tool for cardiovascular events. *J Am Med Assoc* 2001.285:2486-2497.
13. Shera AS. Jawad S. Diabetic Knowledge Attitude and Practice in Pakistan *J Pak Med Assoc* 2002; S2:465470.
14. Talat Naheed etc. Dyslipidaemia.ia in Type 2. diabetes in a teaching hospital Lahore *Pak J Med Sci* 2003; 19(4):230;671.
15. Sohail Rafiq, Nishat Ayub. TG Profile in dyslipidaemia of Type 2 DM. *JCPSP*2008;18(0):270-273.
16. International Diabetic Federation: Prevalence estimate of Diabetes 2010. *MENAIDF Diabetes Atlas* 2010.
17. Shera AS, Jawad F, Maqsood A Prevalence of diabetes in Pakistan. *Diabetes Res Clin Pract.* 2007 May; 76(2):219-22.
18. Yusuf S, Hawken S, Ounpuu S et al. Effect of potentially modifiable risk factors about patients with CHD in 52 developing countries. The Inter Heart Study. *Lancet*2004; 364(9438): 937-52.
19. Canadian Diabetic Association clinical practice guidelines: Dyslipidaemia in adults with diabetes *Canadian Journal of Diabetes* 2006;30{3):230-240.
20. Mazonne T et al. Cardiovascular disease risk in type 2 diabetes. *Lancet* 2008;371: 1800-1808.