



DIYALA UNIVERSITY

FACULTY OF MEDICINE

CASE STUDY REPORT

DYSLIPIDEMIA AMONG TYPE 2 DIABETIC PATIENTS

A Graduation Project Report

Submitted to the Department of Internal Medicine

Diyala University Faculty of Medicine

In Partial Fulfillment Of The Requirement For the Bachelor's Degree In Medicine

And General Surgery

18 April 2022

Prepared by :

Aisha Ahmad Sabeeh

Supervised by ;

Prof. Dr. Ali Mousa J'afar

1443

2021-2022

TABLE OF CONTENTS

	Page
DEDICATION.....	3
ACKNOWLEDGEMENT	4
ABSTRACT.....	5
I. INTRODUCTION.....	6
Objective of the research.....	8
Methodology ;.....	8
II. RESULTS.....	10
III. DISCUSSION.....	15
IV. CONCLUSION.....	17
V. RECOMMENDATION	17
VI. REFERENCES.....	18
VII. ABSTRACT IN ARABIC.....	20

إهداء؛

تحية طيبة ؛

أحمد الله عزَّ وجل الذي وفقني لإتمام هذا البحث العلمي ،ومتعني بالصحة والعافية ومدني بالعزيمة ، فله الحمد حمداً طيباً كثيراً.

إلى أعز الناس وأقربهم إلى قلبي والدتي العزيزة ؛ تاج فخر طالما حملته على رأسي، فلك كامل الشكر والعرفان وإلى والدي العزيز من كان وما زال سندي ووسام عزتي و كبريائي

الذين كانا عوناً وسنداً لي ، و كان لدعائهما المبارك أعظم الأثر في تسيير سفينة البحث حتى ترسو على هذه الصورة.

إلى جدتي الغالية التي كانت معي طيلة رحلتي في هذه السنوات الست وكان لها فضل كبيرٌ عليّ إلى عمي أثير الذي لم يتوان يوماً في مساعدتي ودعمي

إلى اخوتي فاطمة وعبدالرحمن إلى صديقتي العزيزتين مريم عبد السلام وإيلاف يعقوب من كانتا معي في رحلة بحثي وقدمتا إليّ المساعدة والدعم خلال هذه الفترة اشكركما كثيراً .

كما وأود أن أتقدم بالشكر إلى

أستاذي ومشرفي و موجهي الفاضل /الأستاذ الدكتور علي موسى : اتقدم اليه بجزيل الشكر والعرفان لاختياره لهذا الموضوع و توجيهه وتشجيعه المستمر ومتابعته للبحث حتى ظهر بأحسن صورة نرجوها

الدكتور علي ثامر الذي ساعدني في إتمام هذا البحث و كان له فضل علي الدكتور/ زيد المدفعي لجهوده المبذولة في التحليل الإحصائي

أعضاء لجنة المناقشة الكرام لتفضلهم بقبول مناقشة هذه الدراسة .

كما وأتقدم بالشكر الكثير لجميع الأساتذة و الزملاء (في مجموعتي) الذين قدموا لي المساعدة مهما كانت طبيعتها، وإلى كل من قدم لي تشجيعاً مهما بلغت درجته.

الطالبة/ عائشة أحمد

ACKNOWLEDGMENT :

I would thank Allah who enabled me to complete this research, and then great thank and appreciation for my professor dr Ali Mousa for his guidance and encouragement, great thank for dr Ali Thamer for his kind help in cases collection, great thank for dr Zaid Al Madfai for his kind help in doing statical analysis.
also I thank study subjects for their cooperation.

ABSTRACT:

Purpose :To find out the prevalence of dyslipidemia along with its associated risk factors and comorbidities among T2DM patient in Diyala province.

Patients and Methods : The present retrospective cross sectional study based on the available biochemical data of type-2 diabetic patients

This study employed in Diyala province collecting inpatients from Baquaba teaching hospital, outpatients from clinics , college and the nearby places .

Data on socio-demographic characteristics, and clinical factors were collected using a structured questionnaire through face to face interviews. This cross-sectional questionnaire was applied to 109 adults , 54 with T2DM and the other 55 are without, gathering data during the period between 1 of March 2022 and 10 of April 2022 . Inclusion Criteria allowed for Adult T2DM patients (age ≥ 30 years), Exclusion criteria for control cases and T1DM

Results :Fifty four diabetic subjects were studied and compared to fifty five non-diabetic subjects (control). The age of onset was 50.9 ± 10.5 years (30-87 years). The duration of diabetes was < 5 years in 15 (27.8%) subjects, 5-10 years were 16 (29.6%) and > 10 years in 23 (42.6%). our present study indicates that the most common recognized abnormality was hypertriglyceridaemia, positive correlation between HbA1c% and total cholesterol and LDL, There was a significant increase in the presence of proteinuria in diabetic group in those with diabetic nephropathy.

Conclusion: A high significant of dyslipidemia was found among T2DM patients in the study area, The findings of this study should be taken into account to conduct appropriate intervention measures on identified risk factor reduction and implement routine screening, treatments, and prevention of dyslipidemia.

Introduction

Diabetes mellitus is a syndrome with disordered metabolism and inappropriate hyperglycemia due to either a deficiency of insulin secretion or to a combination of insulin resistance and inadequate insulin secretion to compensate for the resistance.¹

It has many causes, most commonly type 1 or type 2 diabetes. Type 1 diabetes is generally considered to result from autoimmune destruction of insulin-producing cells (β cells) in the pancreas, leading to marked insulin deficiency, whereas type 2 diabetes is characterised by reduced sensitivity to the action of insulin and an inability to produce sufficient insulin to overcome this 'insulin resistance'.²

Hyperglycaemia causes both acute and long-term problems. Acutely, high glucose and lack of insulin can result in marked symptoms, metabolic decompensation and hospitalisation. Chronic hyperglycaemia is responsible for diabetes-specific 'microvascular' complications affecting the eyes (retinopathy), kidneys (nephropathy) and feet (neuropathy).²

The worldwide prevalence of DM has risen dramatically over the past two decades, from an

estimated 30 million cases in 1985 to 382 million in 2013 (Fig. 1). Based on current trends, the International Diabetes Federation projects that 592 million individuals will have diabetes by



the year 2035 (see <http://www.idf.org/>). Although the prevalence of both type 1 and type 2 DM is increasing worldwide, the prevalence of type 2 DM is rising much more rapidly, presumably because of increasing obesity, reduced activity levels as countries become more industrialized, and the aging of the population. In 2013, the prevalence of diabetes in individuals from age 20-79 ranged from 23 to 37% in the

10 countries with the highest prevalence (Tuvalu, Federated States of Micronesia, Marshall Islands, Kiribati, Vanuatu, Cook Islands, Saudi Arabia, Nauru, Kuwait, and Qatar, in descending order of prevalence).³

Dyslipidemia:

Disorders of lipoprotein metabolism are collectively referred to as “dyslipidemias.” Dyslipidemias are generally characterized clinically by increased plasma levels of cholesterol, triglycerides, or both, variably accompanied by reduced levels of HDL cholesterol. Because plasma lipids are commonly screened , dyslipidemia is frequently seen in clinical practice.

Obesity and insulin resistance are frequently accompanied by dyslipidemia characterized by elevated plasma levels of TG, low HDL-C, variable levels of LDL-C, and increased levels of small dense LDL. The increase in adipocyte mass and accompanying decreased insulin sensitivity associated with obesity have multiple effects on lipid metabolism.

In insulin-resistant patients who progress to type 2 diabetes mellitus, dyslipidemia remains common, even when the patient is under relatively good glycemic control.³

Literature Review ;

Dyslipidemia is one of the risk factors for increased morbidity and mortality in diabetes. [17]

It's one of the major modifiable risk factors for cardiovascular diseases (CVD) in a type-2 diabetic (T2DM) patient. Dyslipidemia in T2DM patients is attributed due to increased free fatty acid flux secondary to insulin resistance , this will result in in an overproduction of triglyceride-rich lipoproteins from the liver, decreased clearance of triglyceride-rich lipoproteins, and, in some

cases, an altered postprandial lipoprotein metabolism. Accumulating clinical evidence has suggested serum triglyceride (TG) is a leading predictor of atherosclerotic cardiovascular disease, comparable to low-density lipoprotein (LDL)-cholesterol (C) in populations with type 2 diabetes, so early detection and treatment of dyslipidemia in type-2 diabetes mellitus can prevent risk for atherogenic cardiovascular disorder.[¹³]

Diabetic kidney disease (DKD) substantially worsens plasma lipid profile thereby potentiated atherogenic risk.[¹⁸]

Objective :

To determine the prevalence of dyslipidemia and its associated risk factors and complications among T2DM patients in Diyala province ;

To clarify the association between glycated hemoglobin (HbA1c) and the lipid profile in patients with type 2 diabetes mellitus.

To clarify protein urea relation to lipid profile in diabetic patients

Methods and Materials:

Study Design, Study Area, and Period

It is a retrospective cross-sectional study based on the available biochemical data of type-2 diabetic patients

This study employed in Diyala province which is located in Eastern Iraq, 57 km from the capital city, Baghdad.

The study was conducted during the period from 1 of March to the 10th of April of 2022.

collecting data from inpatients in Baquaba teaching hospital, outpatients from clinics , and the nearby places .

Data on socio-demographic characteristics, and clinical factors were collected using a structured questionnaire through face to face interviews.

This data regarding presence of DM, duration of diabetes , age ,gender , residency , level of education , glycemic control, presence of complications, presence of any chronic diseases, previous measures of lipid profile and if there is evidence of dyslipidemia or not and whether it's controlled

This cross-sectional questionnaire was applied to 109 adults , 54 with T2DM and the other 55 are without, Data on HbA1c, Random blood glucose (RBG), total cholesterol (TC), triglycerides (TG), high-density lipoprotein cholesterol (HDL-C), and low-density lipoprotein cholesterol (LDL-C) levels were collected from participants along with RFT(urea & creatinine) , also general urine examination for the presence of protein-urea.

Inclusion Criteria: Adult T2DM patients (age \geq 30years)

Exclusion Criteria : control cases who do not suffer from any type of diabetes mellitus and T1DM patients as were five patients who had type 1 diabetes

Statistical Analysis :

Statistical analyses were performed using SPSS statistical package for Social Sciences (version 20.0 for windows, SPSS, Chicago, IL, USA). Quantitative data are represented as mean, SD, minimum and maximum. Qualitative data are expressed as number and percentage. Student's t-test was used to study the difference between diabetics and control groups.

Pearson's correlation was used to test the relation between HbA1c% with lipid profile,

Chi-square test was used to test the relation between diabetes with other factors.

P value of <0.05 was considered statistically significant.

Results:

Fifty four diabetic subjects were studied and compared to fifty five non-diabetic subjects (control). The age of onset was 50.9 ± 10.5 years (30-87 years). The duration of diabetes was <5 years in 15 (27.8%) subjects, 5-10 years were 16 (29.6%) and >10 years in 23 (42.6%). Fifty three diabetics were controlled (98.1%) and only 1 diabetic was not controlled (1.9%).

Demographic characteristics are presented in the following tables.

Table 1: Demographic characteristics of the studied groups

		Group			
		DM		Control	
		Count	%	Count	%
Age group	<=39	2	3.7%	25	45.5%
	40-49	7	13.0%	19	34.5%
	50-59	17	31.5%	9	16.4%
	60-69	16	29.6%	1	1.8%
	70-79	9	16.7%	1	1.8%
	>=80	3	5.6%	0	0.0%
Gender	Male	27	50.0%	13	23.6%
	Female	27	50.0%	42	76.4%
Residence	Rural	14	25.9%	6	10.9%
	Urban	40	74.1%	49	89.1%
Education	Unknown	7	13.0%	0	0.0%
	High	21	38.9%	17	30.9%
	Low	26	48.1%	38	69.1%

Table 2: Presence of diabetic complications and other chronic diseases in the studied groups

		Group			
		DM		Control	
		Count	%	Count	%
CVD	Yes	29	53.7%	3	5.5%
	No	25	46.3%	52	94.5%
Renal	Yes	21	38.9%	0	0.0%
	No	33	61.1%	55	100.0%
Neurological	Yes	32	59.3%	2	3.6%
	No	22	40.7%	53	96.4%
Chronic disease	Yes	40	74.1%	7	12.7%
	No	14	25.9%	48	87.3%

Table 3: Comparing glucose, HBA1c, urea and creatinine between diabetic subjects and control

	Group							
	DM				Control			
	Mean	SD	Min	Max	Mean	SD	Min	Max
HBA1c% P=0.005	9.49	2.09	5.40	14.00	5.39	.67	3.99	7.50
RBS mg/dl P=0.005	278.43	107.89	106.00	540.00	99.70	17.08	71.00	166.00
Urea mg/dl P=0.005	55.21	39.01	10.67	160.00	24.07	7.27	11.00	38.03
Creatinine mg/dl P=0.005	1.50	1.20	0.38	5.00	0.68	0.21	0.40	1.30

There was a significant difference between diabetic and control groups in HBA1c, RBS, urea and creatinine (P<0.05). Student's t-test HBA1c%, RBS, urea and creatinine were higher in the diabetic group.

Table 4: Comparing lipid profile in the studied groups

	Group							
	DM				Control			
	Mean	SD	Min	Max	Mean	SD	Min	Max
Total cholesterol mg/dl P=0.014	228.24	80.62	103.50	420.00	193.46	63.20	105.00	475.00
Triglyceride mg/dl P=0.005	244.38	115.85	43.20	525.59	148.48	99.42	38.00	496.00
HDL mg/dl P=0.051	43.97	11.29	20.80	80.00	48.68	13.47	29.00	92.00
LDL mg/dl P=0.075	133.00	44.73	41.00	250.00	117.09	47.62	49.00	329.00

There was a significant increase in diabetic than control groups for total cholesterol and TG (P<0.05); while HDL and LDL were not significantly different (P>0.05). Student's t-test HDL and LDL were not significantly different (P>0.05).

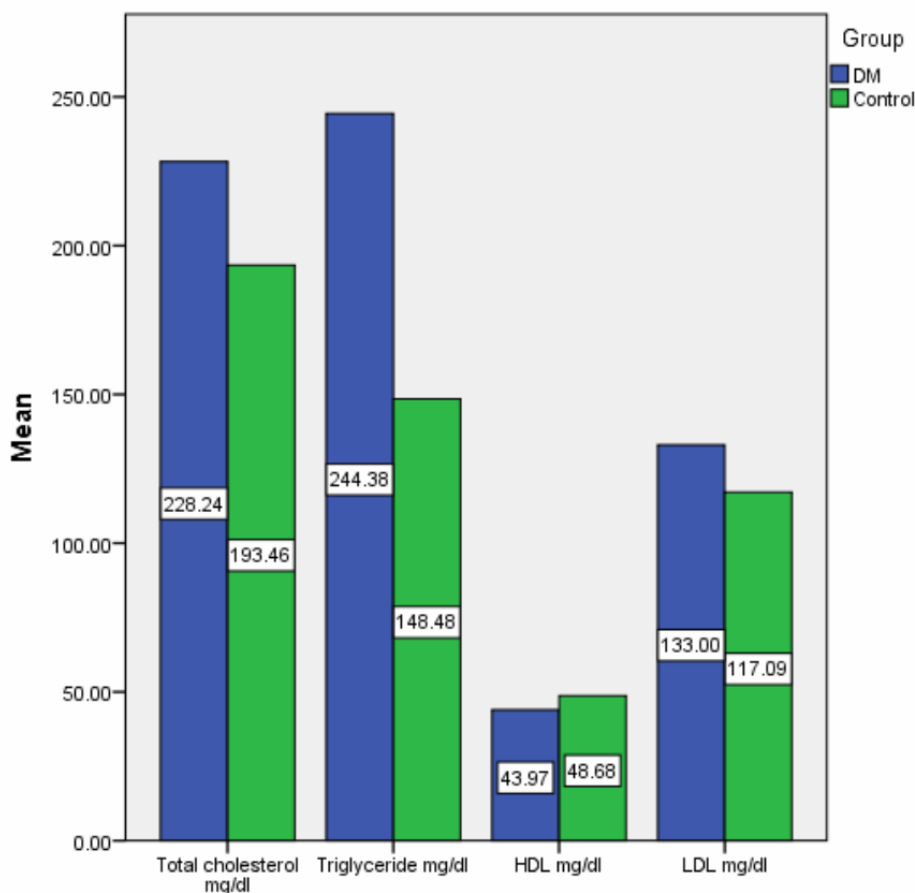


Figure 1: Lipid profile in the studied groups

Studying proteinuria, the following table show the distribution among the studied groups

Table 5: Presence of proteinuria in the studied groups

		Group		Total	
		DM	Control		
Proteinuria	Yes	Count	21	1	22
		%	38.9%	1.8%	20.2%
	No	Count	33	54	87
		%	61.1%	98.2%	79.8%
Total		Count	54	55	109
		%	100.0%	100.0%	100.0%

There was a significant relation between the two groups with proteinuria being more in the diabetic group (P=0.005).

Studying the diabetic group only and the relation of proteinuria to lipid profile is presented in the following table

Table 6: Lipid profile according to the presence of proteinuria

	Proteinuria							
	Yes				No			
	Mean	SD	Min	Max	Mean	SD	Min	Max
Total cholesterol mg/dl P=0.005	284.55	88.11	138.00	420.00	192.41	50.10	103.50	290.00
Triglyceride mg/dl P=0.134	274.08	92.29	80.81	420.00	225.49	126.32	43.20	525.59
HDL mg/dl P=0.043	47.64	9.25	28.80	80.00	41.63	11.96	20.80	70.90
LDL mg/dl P=0.005	161.85	46.14	74.00	250.00	114.65	33.00	41.00	184.50

There was a significant increase in the presence of proteinuria group for total cholesterol, HDL and LDL ($P < 0.05$); while TG was not significantly different ($P > 0.05$). Student's t-test

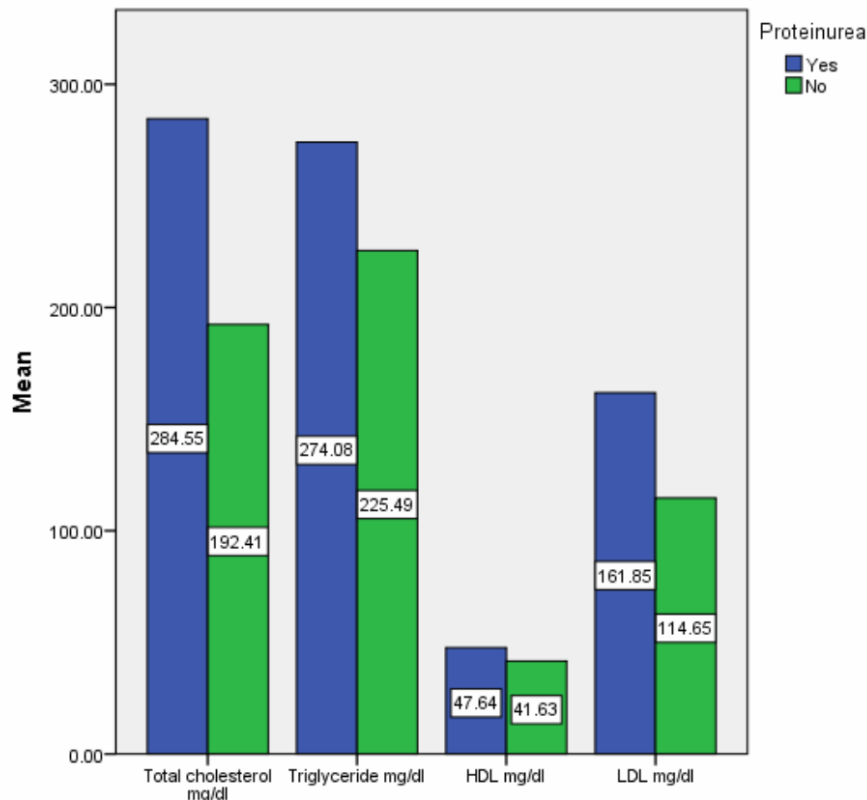


Figure 2: Lipid profile according to proteinuria

Table 7; relation between HbA1c and lipid profile In studied groups

		Diabetic	Control
		HBA1c	
T. cholesterol	Pearson Correlation	0.484**	0.132
	Sig. (2-tailed)	0.005	0.337
	N	54	55
Triglyceride	Pearson Correlation	0.250	0.243
	Sig. (2-tailed)	0.068	0.074
	N	54	55
HDL	Pearson Correlation	-0.104	-0.036
	Sig. (2-tailed)	0.455	0.793
	N	54	55
LDL	Pearson Correlation	0.469**	0.118
	Sig. (2-tailed)	0.005	0.391
	N	54	55

Pearson's correlation test

In the diabetic group there was a positive correlation between HbA1c% and total cholesterol and LDL ($P < 0.05$). No significant correlation was found with TG and HDL ($P > 0.05$).

No significant correlation was found in the control group.

Discussion:

The relation between diabetes mellitus and serum lipid profile had been discussed a lot during the past decades [5,6,7,8]. Both lipid profile and diabetes have been shown to be the important predictors for metabolic disturbances including dyslipidaemia, hypertension, cardiovascular diseases, hyperinsulinemia, etc. [9]. Dyslipidemia as a metabolic abnormality is frequently associated with diabetes mellitus. Its prevalence is variable, depending on the type and severity of diabetes, glycaemic control, nutritional status, age and other factors. Earlier studies also indicated a strong clustering risk factor for coronary artery disease in diabetic subjects [5,10]. Over 70% of patients with type 2 diabetes mellitus had one or more types of dyslipidemia. Similarly, our study results reveal high prevalence of hypercholesterolemia and hypertriglyceridemia, which are well known risk factors for cardiovascular diseases among patients.

In diabetes many factors may affect blood lipid levels, because of interrelationship between carbohydrates and lipid metabolism. Therefore, any disorder in carbohydrate metabolism leads to disorder in lipid metabolism and vice versa [11]. Insulin resistance is a primary defects in the majority of with type-2 diabetes.

There are several studies showed that the insulin affects the liver apolipoprotein production and regulates the enzymatic activity of lipoprotein lipase and cholesterol ester transport protein, which causes dyslipidemia in diabetes mellitus.

The current study attempted to assess the prevalence of dyslipidemia and associated risk factors among T2DM patients in Diyala .

Socio-demographic factors can play role in determining dyslipidemia in diabetic patients. In the current study, dyslipidemia was significantly associated with increasing age (age \geq 50) , also increased in urban area According to the findings of our study indicates that the most common recognized abnormality was hypertriglyceridaemia with mean 244.28 ± 115.85 followed by hypercholesterolemia with mean 228.24 ± 80.62 [Table4] in second place and these articles support our finding respectively [4,12].

While in control group the mean of triglyceride was 148.48 ± 99.42 , total cholesterol 193.64 ± 63.2 with P value < 0.05 which make it significantly different.

We found that there is no significant difference of HDL and LDL between studied group with mean 43.97 ± 11.29 , 133 ± 44.73 in diabetes group and 48.13 ± 13.47 , 117.09 ± 47.62 in control group respectively, with P value > 0.05 and this study disagrees with ours ^[14] .

In the other hand other studies revealed Hypertriglyceridaemia and low HDL level was the most frequent lipid abnormality found in this study.^[13]

In the present study we found a significant difference of presence of proteinuria between the studied group , diabetic patient showed higher percentage of proteinuria than the control subjects 38.9% , 1.8% respectively [Table 5]

There was a significant increase in the presence of proteinuria group for total cholesterol, HDL and LDL ($P < 0.05$); while TG was not significantly different ($P > 0.05$). [Table 6], Figure 2. Our results show that dyslipidemia was highly prevalent among subjects with nephropathy. We couldn't find a previous study consistent with our findings.

This finding is inconsistent with previous studies from^[19] as it shows there's a relation of protein urea with elevated triglyceride level .

In diabetic group there was a positive correlation between HbA1c% and total cholesterol and LDL ($P < 0.05$). This previous study in Iraq in 2021 support our findings^[15] .

No significant correlation was found in the control group.

Conclusion ; A high prevalence of dyslipidemia was found among T2DM patients in the study area, HbA1c value associated with level of lipid profile in diabetic patients.

Also there was a significant protein urea relation to lipid profile in diabetic patients.

Recommendation:

The American Diabetes Association 2019 guidelines recommend that all diabetic patients with ASCVD or patients with a 10-year atherosclerotic cardiovascular risk > 20% should be treated with high-intensity statins (goal of 50% reduction in LDL-cholesterol) in addition to lifestyle modification^[16].

In our study we We faced difficulties in performing the investigation of lipid profile , general urine examination from inpatient in hospital as they are not routine investigations for T2DM patient , so we recommended that they should be routinely investigated in order to decrease its associated complications and comorbidities and to facilitate the collection of data in the future .

The findings of this study should be taken into account to conduct appropriate intervention measures on identified risk factor reduction and implement routine screening, treatments, and prevention of dyslipidemia.

ASCVD= Atherosclerotic cardiovascular disease

REFERENCES:

- 1- 2020. CURRENT Medical Diagnosis & Treatment. 59th ed. pp.Chapter 27 Diabetes Mellitus & Hypoglycemia Umesh Masharani, MB, BS, MRCP (UK), pp 1228.
- 2- Penman, I., Ralston, S., Strachan, M. and Hobson, R., 2018. Davidson's principles and practice of medicine. 23rd ed. pp.Chapter 20 diabetes mellitus pp722.
- 3- Kasper, D., Fauci, A., Hauser, S., Longo, D., Jameson, J. and Loscalzo, J., 2015. Harrison's Principles of Internal Medicine. New York: McGraw-Hill Professional Publishing, pp.seC tion 3 oBesity, diaBetes mellitus, and metaBoliC syndrome, 417 Diabetes Mellitus: Diagosis, Classification, and Pathophysiology Alvin C. Powers . Pp2400.
- 4- 2014. The prevalence of dyslipidemia in patients with diabetes mellitus of ayurveda Hospital. [online] Available at: <<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4051117/#!po=72.5806>> [22 May 2014].
- 5- Elinasri HA, Ahmed AM. Patterns of lipid changes among type 2 diabetes patients in Sudan. Eastern Mediter Health J. 2008;14:2. [PubMed] [Google Scholar]
- 6- Mooradian AD. Dyslipidemia in type 2 diabetes mellitus. Nat Clin Pract Endocrin Metab. 2009;5:150–159. doi: 10.1038/ncpendmet1066. [PubMed] [CrossRef] [Google Scholar]
- 7- Peters AL. Clinical relevance of non-HDL cholesterol in patients with diabetes. Clin Diabetes. 2008;26:3–7. doi: 10.2337/diaclin.26.1.3. [CrossRef] [Google Scholar]
- 8- Lu W, Resnick HE, Jablonski KA, Jones KL, Jain AK, Howard WJ. Non-HDL cholesterol as a predictor of cardiovascular disease in type-2 diabetes: the strong heart study. Diabetes Care. 2003;26:16–23. doi: 10.2337/diacare.26.1.16. [PubMed] [CrossRef] [Google Scholar]
- 9- Goldberg IJ. Diabetic dyslipidemia: causes and consequences. J Clin Endo Metab. 2001;8(3):965–971. [PubMed] [Google Scholar]
- 10- Regmi P, Gyawali P, Shrestha R, Sigdel M, Mehta KD, Majhi S. Pattern of Dyslipidemia in Type-2 Diabetic Subjects in Eastern Nepal. J Nepal Assoc Med Lab Sci. 2009;10:11–13. [Google Scholar]

- 11- Chatterjee MN, Shinde R. Text book of medical laboratory technology. Metabolism of carbohydrates. 6. Delhi-India: Jaypee Brothers Medical publisher; 2005. pp. 266–330. [[Google Scholar](#)]
- 12- [Ejcm.journals.ekb.eg. 2017. Hypertension and Dyslipidemia among Type II Diabetic Patients and Related Risk Factors and Complications. [online] Available at: <https://ejcm.journals.ekb.eg/article_6868_e84462eebf38bd5d7c4f0915248dc93c.pdf> [Accessed March 2017].
- 13- Haile, K. and Timerga, A., 2020. <p>Dyslipidemia and Its Associated Risk Factors Among Adult Type-2 Diabetic Patients at Jimma University Medical Center, Jimma, Southwest Ethiopia</p>. Dyslipidemia and Its Associated Risk Factors Among Adult Type-2 Diabetic Patients at Jimma University Medical Center, Jimma, Southwest Ethiopia].
- 14-<https://pubmed.ncbi.nlm.nih.gov/33149642/>. 2020. Prevalence and Associated Factors of Dyslipidemia Among Adults with Type 2 Diabetes Mellitus in Saudi Arabia.
- 15- 2021. Association between HbA1c and dyslipidemia among sample of Iraqi Patients with Type2 DM. [online] Available at: <<https://iqjmc.uobaghdad.edu.iq/index.php/19JFacMedBaghdad36/article/view/1864>> [Accessed 5 October 2021].
- 16- World journal of diabetes. 2019. Management of diabetic dyslipidemia: An update Ishwarlal Jialal and Gurdeep Singh. [online] Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6522756/#__ffn_sectitle> [Accessed 14 May 2019].
- 17- 2022. Dyslipidemia and its associated factors among adult diabetes outpatients in West Shewa zone public hospitals, Ethiopia. [online] Available at: <<https://bmccardiovascdisord.biomedcentral.com/articles/10.1186/s12872-022-02489-w>> [Accessed 11 February 2022].
- 18- 2018. Pathophysiology of Diabetic Dyslipidemia Tsutomu Hirano. J Atheroscler Thromb.. [online] Available at: <<https://pubmed.ncbi.nlm.nih.gov/29998913/>> [Accessed 12 July 2018].
- 19- 2018. Albuminuria status and patterns of dyslipidemia among type 2 diabetes black patients managed at a tertiary health-care hospital: A Post hoc analysis. [online] Available at: <<https://www.sjkdt.org/article.asp?issn=1319-2442;year=2018;volume=29;issue=3;spage=649;epage=657;aulast=Kajingulu>> [Accessed 28 July 2018].

الخلاصة :

الهدف من الدراسة : التعرف على نسبة الإصابة بعسر او اضطراب دهون الدم وما يرتبط به من عوامل الخطر والأمراض المصاحبة بين مرضى السكر النوع الثاني في محافظة ديالى.

المرضى والطرق: الدراسة المقطعية الحالية بأثر رجعي بناءً على البيانات البيوكيميائية المتاحة لمرضى السكري من النوع الثاني.

تمت هذه الدراسة في محافظة ديالى وقد تم جمع البيانات من المرضى المنومين من مستشفى بعقوبة التعليمي والمرضى من العيادات والأماكن القريبة.

تم جمع البيانات حول الخصائص الاجتماعية والديموغرافية والعوامل السريرية باستخدام استبيان منظم من خلال المقابلات وجهاً لوجه. وقد تم تطبيق هذا الاستبيان المقطعي على 109 من البالغين ، 54 منهم مصابين بالسكري النوع الثاني، بينما الخمس والخمسون الآخرون لا يعانون من السكري ، وتم جمع هذه البيانات خلال الفترة بين 1 مارس 2022 و 10 أبريل 2022. وقد كانت معايير التضمين المسموح بها لمرضى السكري النوع الثاني البالغين من (العمر ثلاثين سنةً فما فوق) ، أمّا معايير الاستبعاد فقد كانت للحالات التي لا تعاني من السكري في الاصل ومن يعاني من السكري النوع الاول.

النتائج: تمت دراسة أربعة وخمسين شخصاً مصاباً بمرض السكري ومقارنتهم بخمسة وخمسين شخصاً غير مصابين بمرض السكر (مجموعة التحكم). كان عمر البدء 50.9 ± 10.5 سنة (30-87 سنة). كانت مدة مرض السكري أقل من 5 سنوات في 15 (27.8%) ، 5-10 سنوات كانت 16 (29.6%) وأكثر من 10 سنوات في 23 (42.6%). تشير دراستنا الحالية إلى أن الاضطراب الأكثر شيوعاً هو ارتفاع دهون الدم الثلاثية، وأن هناك علاقة إيجابية بين اختبار الهيموغلوبين الغليكوزيلاتي (HbA1c %) والكوليسترول الكلي والبروتين الدهني منخفض الكثافة LDL ، وكانت هناك زيادة كبيرة في وجود بروتينية في مجموعة مرضى السكري الذين يعانون من اعتلال الكلية السكري. كما وكانت هذه الزيادة في وجود مجموعة البروتينية للكوليسترول الكلي ، HDL و LDL.

الخاتمة : تم العثور على نسبة عالية من اضطراب أو عسر دهون الدم بين مرضى السكري الثاني في منطقة الدراسة ويجب أن تؤخذ نتائج هذه الدراسة في عين الاعتبار لإجراء تدابير التدخل المناسبة بشأن الحد من عوامل الخطر المحددة وتنفيذ الفحص الروتيني والعلاجات والوقاية من اضطراب دهون الدم قدر الامكان