The Relation-Ship Between Diabetes Mellitus And Some Blood Parameters And Liver Enzymes

العلاقة بين مرض السكري وبعض انزيمات الكبد ومعايير الدم

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الخلاصة:

الهدف: تسليط الضوء على التغيرات المرضية لبعض انزيمات الكبد والدهون الثلاثية والدهون الواطئة الكثافة والدهون العالية الكثافة في المرضى الذين يعانون من النوع الثاني لمرضى السكري.

المنهجية: نفذت الدراسة على (٢١) مريض مصابين بمرضى السكري من أصل (١٠٠) شخص مراجع الى مستشفى الصدر التعليمي في النجف الاشرف في تشرين الاول وتشرين الثاني وكانون الاول لعام ٢٠١٢ وقياس مستوى السكر في الدم اضافة الى بعض معايير الدم وبعض انزيمات الكبد والدهون الثلاثية والكوليسترول والدهون العالية الكثافة و الواطئة، التحليل الاحصائي تضمن الفروقات بين اعلى قيمه واقل قيمه (معدل) .

النتائج: اظهرت النتائج زيادة الدهون الثلاثية Triglycerides في عشرة مرضى تراوح معدل الدهون الثلاثية (٢٠٥-٣٩٨) ملغرام/ديسيليتر. بينما شهد مستوى الكوليسترول ارتفاعا في عشرة من مرضى السكر (المعدل ٢٢٧-٤٠٨) ملغرام/ديسيليتر، وارتفع انزيمي الكبد (GPT وGOT) في سبعة من مرضى السكري وتراوح معدل الارتفاع (٤٨-٥٩).

ولكن الدهون واطئة الكثافة (LDL) شهدت هي الاخرى انخفاضا في (١٨) من النساء المصابات بداء السكري.

اظهرت الدراسة بعض الملاحظات عن ارتفاع بعض معايير الدم اذ شهدت (١٣) امراءه مصابه بداء السكري انخفاضا في عدد كريات الدم الحمر وكان المعدل (٢.٧-٣.٩) مليون كرية دم حمراء. وزيادة في العدد الكلي للصفيحات الدموية في عشرة نساء مصابات بمرض السكري اذ كان معدلها (٤١٠-٥٢٠) لكل سنتمتر مكعب من الدم.

الاستنتاجات: أظهرت الدراسة زيادة في مستوى الدهون الثلاثية والكوليسترول وارتفاع انزيمي الكبد GPTوGOT وانخفاض في الدهون واطئة الكثافة لمرضى السكري، من ناحية اخرى نقصان في عدد كريات الدم الحمراء للإناث المصابات بالسكري وزيادة في عدد الصفيحات الدموية.

التوصيات: دراسة العلاقة بين مرضى السكري واضطرابات الغدد الصم ومستوى الاجسام المناعية (المستضدات) .

Abstract:

Objectives: The aim of present study was focused the light on the pathological changes in the some liver enzymes and triglycerides. Low Density Lipoprotein (LDL). High Density Lipoprotein (HDL), in the patients suffers from diabetes mellitus type 2.

Methodology: The present study carried out on (21) patients effected with diabetes mellitus from (100) persons were examined in the education of Al-Sader hospital Al-Najaf in October, November and December 2012. The study include measurement of the glucose level, some of blood parameters, triglycerides, cholesterol, High Density Lipoprotein (HDL) and Low Density Lipoprotein (LDL), the biostatic use difference between the maximum and minimum values (range).

Results: Our findings were revealed increase in the triglycerides in ten patients, the range of triglycerides are (205-398) mg/dl, and while the cholesterol level also increased in ten diabetic patients (range 227-408)mg/dl. So the GPT and GOT was elevated in seven diabetic patients (range 48-59) I/U, but the low lipid density (LDL) was revealed decrease in the (18) males diabetic patients

(range 72-112) our observations were appeared some parameters of blood, the present study was noticed decrease the RBCs count in (13), diabetic females

(range 2.7-3.9) million corpuscles and increase in the blood platelets count in ten females diabetic patients (range 410-520)/cm^3 from blood.

Conclusion: Increase in TG, cholesterol and GPT,GOT,LDL in diabetic patient, decrease in RBCs count and increase in Thrombocytes count in female diabetic patient.

Recommendations: Further studies are needed to show the relation-ship between diabetes with endocrine disorder and immunological level

Key word: Diabetes patient, Liver enzymes, Blood parameters.

INTRODUCTION:

The type 2 diabetes mellitus was increased in the word and reached to endemic level in some countries such as india and china (1). Investigators (2) were approached to that the main complications, which accompanied the diabetes mellitus type 2, was liver diseases such as liver cirrhosis and led to high mortality when compared the diabetes mellitus with vesicular heart diseases, the researches were pointed out to the phenomena of insulin resistance, this play a rule as a central pathological changes in all the fatty liver disease (non- alcoholic) and the diabetes mellitus type 2 that consider as guide for diagnosis of liver metabolic disease syndrome (3).

The type 2 diabetes mellitus was distinguished in similar symptoms in eachinsuline dependent and non- insulin dependent diabetes mellitus during the period of growth in the patients which represent the insulin resistance, that functional state which pointed to over growth and obesity (4), these may be led to diabetes mellitus type 2 occurrence, also the diabetes mellitus occurs in young patients, this disease is not isolate case from other pathological symptoms, but accompanied by abnormal metabolic processes which represents danger to cardiovascular system, these factors were collect in metabolic syndrome which represented by increase lipids in human body, obesity and hypertension (5,6).

The aim of present study was focused the light on the pathological changes in the some liver enzymes and triglycerides. Low Density Lipoprotein (LDL). High Density Lipoprotein (HDL), in the patients suffer from type 2diabetes mellitus.

METHODOLOGY:

The present study was conducted on the (100) females and males patients age ranged (20-60) year were examined in October, November and December 2012in the education Al-Sader hospital in the Najaf provenance, twenty-one patients from (100) had increased in glucose levels in the blood, five milliliter of blood from each patients were taken from radial vein. Biochemical testes was including measurement of glucose level and blood parameters such ashemoglobulin level, Red blood cells corpuscles (RBCs) count, White blood cells count (WBCs), Erythrocyte sedimentation rate (E.S.R) and blood platelets count.

Also the liver enzymes Glutamic pyruvate Transaminase (GPT) and Glutamic Oxalate transaminase (GOT) were measured as well as the Triglycerides, Cholesterol, High Density Lipoprotein (HDL) and Low Density Lipoprotein (LDL) were assessed, the biostatic use difference between the maximum and minimum values (range).

RESULTS:

Our findings was revealed, high number of male patients were affected by type 2 diabetes mellitus when compared with women patients, these results led to changes in some liver enzymes such as GPT and GOT, Triglycerides and Cholesterol, (Table 1).

The present study appeared decrease in Low Density Lipoprotein (LDL) level especially in male patients with type 2 diabetes mellitus, recorded decrease in RBCs count especially in females with type 2 diabetes mellitus.

(Table 2) show the RBCs count ranged (2.7-3.9) million in diabetic females, while in diabetic male (4-4.2) million. From another hand our results were recorded increase in Erythrocyte Sedimentation Rate (E.S.R) in diabetic patients, ranged (27-52).

Table1: Show the glucose level in blood, Triglycerides, Cholesterol and some liver enzymes in type 2 diabetic patients in the education Al-Sader hospital/ Najaf. Iraq.

	Parameters	No.of patients	Female	Male	Range	Normal value
1-	Glucose level in blood	21	4	17	155-405 mg/dl	80-120 mg/dl
2-	Triglycerides	21	2	8	205-398 mg/dl	35-200 mg/dl
3-	Cholesterol	21	3	7	227-408 mg/dl	120-220 mg/dl
4-	GPT	21	2	5	48-59 I/U	0-40 I/U
5-	GOT	21	1	6	49-57 I/U	0-40 I/U
6-	HDL	21	3	4	75-80 mg/dl	30-70 mg/dl
7-	LDL	21	3	18	72-112 mg/dl	130-160 mg/dl

In the table 1: increase in the glucose level in the (17) male, the (8) male diabetic patient revealed increase in the triglyceride but the cholesterol level also increase in male patient enzyme of the liver (GPT,GOT) elevated in the male patient when compare with the number of female. The LDL in the (18) diabetic male patient decrease in value when compare with normal.

Table 2: Some parameters of diabetic patients blood in the education Al-Sadder hospital, Najaf. Iraq.

	Parameters	No. of patients	No. Female	No. Male	Range	Normal value
1-	Red blood corpuscles count	21	13	3	Female=2.7-3.9 million Male=4-4.2 million	→4.5 million →5.5 million
2-	White blood cells count	21	2	1	Female= 12000 ↑ Female= 27000 ↓ Male= 12000 ↑	4000-11000 c/mm
3-	Blood platelets count	21	10	1	9 female= (410-520) ↑ 1 female= (114) ↓ 1 male ↑	300-350/ $Cm^3$of blood
4-	Erythrocyte Sedimentation Rate (E.S.R)	21	6	2	27-52	5-15 mm/hr

In the table 2: Decrease in RBCs count in the (13) female effected with the diabetic, the blood platelets count in (10) female with diabetes appeared increase value and the ESR in the (6) diabetic females revealed increase in the value.

DISCUSSION:

Our results were correspondence with previous studies (7) they mentioned, the (type 2) diabetes patients had cardiovascular disease, with high liver enzyme, and elevation in triglycerides and cholesterol, from other hand some investigators were pointed out, there are relationship between diabetes mellitus and thyroid diseases (8), they recorded elevation in thyroid stimulating hormone (TSH) in the type 2 diabetes patients. these results were agreedwith previous study (9) they reported there is association between the fatty liver disease and type 2 diabetic patients had abnormal value of liver enzymes besides affected by cardiovascular diseases.

These observations was varies with current studies (10), our observation about White Blood Cell count (WBCs) was revealed slightly increase in diabetic patients, that ensure the previous investigators (11), they suggested the (WBCs count) increasing in diabetic persons due to stimulation of bone marrow to produce neutrophils and eosinophil.

Our observations was identical with current study (12), they mentioned (E.S.R) increase belonged to bacterial and fungal infection which accompanied with diabetes mellitus.

CONCLUSIONS:

This present study was revealed increase in triglycerides level, cholesterol level, also elevation in GPT and GOT. And decrease in LDL in diabetic patients.

From another hand decrease in RBCs count in diabetic females and increase in blood platelets count.

RECOMMANDATIONS:

1- In the future, studying the association between diabetes mellitus and endocrine disorder.
2- Study the relation –ship between diabetes mellitus, and immunoglobulin (IgA,IgM,IgE) level.

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