بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قال الله تعالى

الم (1) ذَلِكَ الْكِتَابُ لَا رَيْبَ فِيهِ هُدًى لِلْمُتَّقِينَ (2) الَّذِينَ يُؤْمِنُونَ بِالْغَيْبِ وَيُقِيمُونَ الصَّلَاةَ وَمِمَّا رَزَقْنَاهُمْ يُنْفِقُونَ (3) وَالَّذِينَ يُؤْمِنُونَ بِمَا أُنْزِلَ إِلَيْكَ وَمَا أُنْزِلَ مِنْ قَبْلِكَ وَبِالْآخِرَةِ هُمْ يُوقِنُونَ (4)

صدق الله العظيم

سورة البقرة الآيات 1-4

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Dedication

To the candle of my life (my mother)

Half of apple my husband who encourage me to complete this work

To the pleasure of my life (my son)

To my brother

To my colleagues and friends

I dedicate this work

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Acknowledgement

My grateful thanks firstly for Allah .then I would like to express many thanks to my supervisor Prof. Babikr Ahmed Mohamed without his strict continuous guidance this work could have not been a reality. It is my pleasure to thank the staff members of hematology department for their help. I am particularly grateful to my mother and my brothers for their emotional support. However, I cannot forget my lovely son Mohamed . Finally, I would like to thank my husband for his encouragement and support.

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Abstract

This is a descriptive cross sectional study which was conducted in Khartoum state during the period from April/ 2013 to July / 2013 to evaluate the effect of type 2 diabetes on coagulation tests (Prothrombin time, Activated partial thrompoblastin time, Thrombin time and Fibrinogen level). A 100 sample were collected from type 2 diabetic patient according to inclusion criteria and considered as case, and 50 samples were collected from healthy individual and considered as control.4.5 ml of fresh venous blood where collected from diabetic patient , after filling the questionnaire, in plastic container containing 0.5ml of 3.2 % tri sodium citrate solution for anticoagulation . Then the contents of the container were mixed and centrifuged at 3000 round / min for 15 minutes for preparation of platelets poor plasma (ppp).the ppp were tested for the Prothrombin time, Activated partial thrompoblastin time, Thrombin time and fibrinogen level by using the coagulometer. The results were analyzed by independent T test the SPSS computer programme. The result of cases revealed that Prothrombin time =14.1seconds , Activated partial thrompoblastin time=31.6 seconds , ,Thrombin time=5.8 seconds and fibrinogen=572.5 mg/dl . The results of control group revealed that Prothrombin time=13.2 seconds .Activated partial thrompoblastin time =29.4 seconds, Thrombin time= 7.8 seconds and fibrinogen level= 274.0 mg/dl.

Over all the results were showed significant increase in PT , PTT and Fibrinogen level when compared with control group with P value > 0.00 (This increase within normal range), and significant decreased in TT when compared with control group with P value > 0.00. no significant change noticed in the different sex in APTT,TT and Fibrinogen with P value >0.05 but there was significant change noticed in the different sex in PT with p value<0.05.no significant change noticed in the different age group in PTT ,TT and Fibrinogen with P value >0.05

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but there was significant change noticed in the different age group in PT with p value<0.05.

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ملخص الدراسه

هذه دراسه وصفيه مقطعيه اجريت فى ولايه الخرطوم فى الفـتره مـابين ابريل/ 2011 الى يوليو/ 2011 لتقويم اثر داء السـكري علـى اختبـارات تخثر الدم (زمن البروثروميين, زمن الثرومبوبلاسـتين المنشـط الجـزئى , زمــن الثرومــبين ومســتوي الفــبرينوجين) اخــذت عينــات مكونــة مــن 100مصاب بداء السكرى النوع الثاني و 50 عينة من اشخاص اصحاء تـم اخذ 4.5 مليلتر عينة دم وريديه من مرضى السكرى النوع الثانى ووضعت فى وعاء بلاستيكى يحتوى على 0.5 ملليتر مـن ثلاثـى سـترات الصـوديم لمنع التخثر.تم استخدام جهاز الطرد المركزي بسرعة ثلاثة الاف لفـة فـي الدقيقة ولمدة 15 دقيقة لتحضير عينة البلازما فقيـرة الصـفائح الدمويـة التي تم اختبارها لتحديد زمن الثرومبين وزمـن الثرومبوبلاسـتين المنشـط الجزئي , زمن الثرومبين ومسـتوي الفـبرينوجين باسـتخدام جهـاز قيـاس التخثر الالـي (الكلـوت). تـم تحليـل النتـائج باسـتخدام اختبـار الفـرق بيـن المتوسطين غير المعتمدين في برنامج الحزم الاحصائية للعلوم الاجتماعية المحوســب. اظهــرت النتــائج للعينــات الاختبــاريه ان متوســط زمــن الثرومبوبلاستين المنشط الجزئ هو 31.6ثـانيه . وزمـن البروثرومـبين هـو 14.1ثانيه ,زمن الثرومـبين هـو 5.8 ومسـتوى البفـبرينوجين هـو 572.5. اظهرت النتائج فى العينـات الضـابطه ان متوسـط زمـن الثرومبوبلاسـتين المنشط الجزئ هو 29.4 ثانيه وزمن البروثرومبين هو 13.2 ثانيه ,زمن الثرومبين هو 7.8 ثانيه ومستوى الفبرينوجين هو 274.0 ملجم/ديسـيلتر.

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اظهرت الدراسه ارتفاعا ذا دلالة احصـائية فـى زمـن الثرومبوبلاسـتين المنشـط الجـزئى, زمـن الثرومـبين ومسـتوي الفـبرينوجين فـى العينـات الاختباريه عند مقارنتها بالعينات الضابطه .بينمـا يوجـد نقصـانا معنويـا فـى زمن الثرومبين فى العينات الاختباريه عند مقارنتها بالعينات الضابطه . لـم يكــن هنالــك ارتفــاع معنــوي ناتــج مــن تغيــرات الجنــس فــي زمــن الثرومبوبلاستين المنشط الجزئي, زمن الثرومبين ومسـتوي الفـبرينوجين ولكن كانت هناك فروقا ذات دلالات احصائية ناتجة من تغيرات الجنس في زمن البروثرومبين. كما لم تكن هنالك فروقا ذات دلاله احصائيه ناتجه مـن المتغيرات العمريه في كل الختبارات ماعدا زمن البروثرومـبين فقـد وجـد فيه فرق ذا دلاله احصائيه ناتج من المتغيرات العمريه.

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Abbreviations

Abbreviation	Full text
DM	Diabetes mellitus
IDDM	Insulin dependent diabetes mellitus
NIDD	Non Insulin dependent diabetes mellitus
ECs	Endothelium cells
t-PA	Tissue plasminogen activator
TFPI	Tissue factor pathway inhibitor
TF	Tissue factor
EDRF	Endothelial derived relating factor
GPIa	Glycoprotein Ia
GPIb	Glycoprotein Ib
GPIIb	Glycoprotein IIb
VWF	Von willebrand factor
TXA2	Thromboxane A2
cAMP	Cyclic adenosine monophosphate
PGI2	Prostaglandin prostacyclin
HMWK	High molecular weight kinogen
APC	Activated protein c
ZPI	Z related protease inhibitor
AT	Antithrombin
PAI-1	Plasminogen activator inhibitor 1
GDM	Gestational diabetes mellitus
LADA	Latent autoimmune diabetes of adults
MRDM	Malnutrition related diabetes mellitus
HbA1	Hemoglobin A1
DKA	Diabetic ketoacidosis
CNS	Central nerve system
PPP	Platelets poor plasma
TT	Thrombin time
FDPs	Fibrinogen degradation products
PTTK	Partial thromboplastin time with kaolin
KCCT	Kaolin cephalin clotting time
O.D	Optical density
APTT	Activated partial thromboplastin time
PT	Prothrombin time

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