

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قال الله تعالى

لَا يُكَلِّفُ اللَّهُ نَفْسًا إِلَّا وُسْعَهَا ۚ لَهَا مَا كَسَبَتْ وَعَلَيْهَا مَا اكْتَسَبَتْ ۗ رَبَّنَا لَا تُؤَاخِذْنَا إِنْ نَسِينَا أَوْ
أَخْطَاْنَا ۗ رَبَّنَا وَلَا تَحْمِلْ عَلَيْنَا إَصْرًا كَمَا حَمَلْتَهُ عَلَى الَّذِينَ مِنْ قَبْلِنَا ۗ رَبَّنَا وَلَا تُحَمِّلْنَا مَا لَا طَاقَةَ
لَنَا بِهِ ۗ وَاعْفُ عَنَّا وَارْحَمْنَا ۚ أَنْتَ مَوْلَانَا فَانصُرْنَا عَلَى الْقَوْمِ الْكَافِرِينَ

صدق الله العظيم

سورة البقرة الآية ٢٨٦

Dedication

To my country Sudan,

To my father Hasabo,

To my mother Samia,

To my family,

To my dear friend

Gassan

ACKNOWLEDGMENT

Thanks at first and last to (ALLAH) who enabled me to conduct this study.

My special thanks and respect to my supervisor Dr. Munsoor for his close supervision, effort, patience, invaluable advices and kind guidance.

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Abstract

Diabetes mellitus is a major health problem that results in significant morbidity and mortality from diverse complications. Thrombohemorrhagic complications are well recognized among diabetic population. A total of 100 diabetic type II subjects aged between 30 to 80 years attending Diabetic and Endocrine Hospital were collected for the study, 20 age and sex matched non diabetic healthy person were recruited as controls. Prothrombin times (PT), activated partial thromboplastin time (APTT) and fibrinogen level were estimated using coagulometer. There were no significant changes in mean PT value (14.17 sec) in result when compared to the controls (mean 14.14 sec) ($P=0.92$), and no significant correlation between PT and age of the patients ($P=0.236$) and duration of the disease ($P=0.132$). APTT showed an increase in mean (27.16 sec) when compared to the mean of controls (25.95 sec), but statistically not significant ($P=0.189$). There were insignificant positive correlation between APTT and age of the patients ($P=0.176$) and duration of the disease ($P=0.385$). The mean fibrinogen level was significantly higher in the diabetic type II patients (mean 358.78 mg/dl) than the controls (mean 205 mg/dl) ($P=0.00$). Fibrinogen increased in a time dependant way and its statistically significant when compared to the age of the patients ($P=0.030$), and the duration of the disease ($P=0.038$). In conclusion we found that there were no clinical effects of diabetic to the PT value and its rising APTT value but the value remain in normal limit. Diabetes type II rising plasma fibrinogen level and it's affected by duration of the disease and age of the patients.

مستخلص البحث

داء السكري من أكبر المشاكل الصحية حول العالم وتنتج منه العديد من المضاعفات المرضية، و تعتبر مضاعفات النزف و التجلط من أهم هذه المضاعفات. تم جمع مائة عينة دم من مرضى السكري من النوع الثاني من اعمار تتراوح ما بين ٣٨-٧٥ سنة وفترة استمرارية للمرض ما بين سنة واحدة الى ثلاثين سنة وللمقارنة تم جمع عشرين عينة من متبرعين أصحاء غير مصابين بمرض السكري من اعمار تقارب اعمار المرضى. تم إجراء الفحوصات الآتية (١) زمن تجلط البروثرومين (٢) زمن تجلط الثرومبلاستين الجزئي (٣) قياس مستوى الفيبيرينوجين. وذلك للوقوف على مستوى أداء وكفاءة بعض عوامل التجلط عند مرضى السكري . تم إجراء الفحوصات باستخدام جهاز زمن التجلط الالى. وجد من التجربة أن نتائج زمن تجلط البروثرومين لمرضى السكري عند مقارنتها بمتوسط نتائج المشاركين الأصحاء اعتماداً على العمر وفترة استمرارية المرض ذات نتائج متفاوتة ولكن دون قيمة معنوية وجد أيضاً أن هنالك علاقة طردية ضعيفة دون قيمة إحصائية معنوية بين زمن تجلط البروثرومين وعمر المريض (قيمة المعنوية=٠.٥٠١) وفترة استمرارية المرض (قيمة المعنوية=٠.٢٩٣) . وجد من نتائج زمن تجلط الثرومبلاستين الجزئي النشاط عند مرضى السكري عند مقارنتها بمتوسط نتائج المشاركين الأصحاء أن زمن التجلط يزيد زيادة دون قيمه إحصائية معنوية (قيمة المعنوية ٠.٢٧٣) وعند مقارنتها اعتماداً على عمر المريض و فترة استمرارية المرض وجد أن هنالك علاقة طرديه ضعيفة دون قيمه إحصائية معنوية بين زمن تجلط الثرومبلاستين الجزئي وعمر المريض (قيمة المعنوية=٠.٣٠٥) وفترة إستمرارية المرض (قيمة المعنوية=٠.٣٠) . كما وجد من الدراسة ان مستوى الفيبيرينوجين في البلازما عند مرضي السكري من النوع الثاني يزيد زياده ذات دلالة إحصائية معنوية قوية (قيمة المعنوية=٠.٠٠) وعند مقارنة مستوى الفيبيرينوجين مع عمر المرضي وجد أن هنالك علاقة طرديه ذات دلالة إحصائية معنوية (قيمة المعنوية=٠.٠٣) وكذلك وجد ان هنالك علاقة طردية ذات دلالة إحصائية معنوية ضعيفة (قيمة المعنوية=٠.٠٥).

List of abbreviations

ADP	Adenosine diphosphate
AGE	Advanced glucation end-product
APTT	Activated partial thromboplastin time
ATP	Adenosine triphosphate
CAD	Coronary artery disease
cAMP	Cyclic adenosine mono phosphate
CHD	Coronary heart disease
CVD	Cardio vascular disease
DIC	Disseminated intravascular coagulation
DM	Diabetes mellitus
ECs	Endothelial cells
FDP	Fibrin degradation products
GDM	Gestational diabetes mellitus
GLUT4	Glucose Transporter 4
GP	Glycoprotein
GTT	Glucose Tolerance Test
HC-II	Heparin co-factor II
HMWK	High molecular weight kininogen
IDDM	Insulin dependent diabetes mellitus
IL	Interleukin

IR	Insulin resistance
Lp-A	Lipo protein –A
α 2-MG	α 2- macro globulin
MI	Myocardial infarction
mRNA	Messenger ribonucleic acid
NADP	Nicotinamide adenine dinucleotide phosphate
NIDDM	Non- Insulin dependent diabetes mellitus
NO	Nitric oxide
OCS	Open canalicular system
PAI-1	Plasminogen activator inhibitor-1
PGI ₂	Prostaglandin-I ₂
PT	Prothrombin time
TATc	Thrombin-antithrombin complex
TF	Tissue factor
TNF	Tissue necrosis factor
t.PA	Tissue plasminogen activator
TXA ₂	Thromboxan A ₂
u.PA	Urinary plasminogen activator
VCAM-1	Vascular cell adhesion molecule-1
VWF	Von Willebrand factor

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