

# Dedication

,,,"To

,,,My family

,,,and all my beloved friends

...I dedicate this work

,,REHAB

## **Acknowledgements**

Praise to Allah, the almighty who supported and gave me strength to complete this work

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## **Abstract**

This is a cross-sectional study conducted during the period from March to August 2010, to asses the serum levels of cardiac enzymes (Creatine kinase, aspartate aminotransferase and lactate dehydrogenase) in 70 Sudanese patients with type 2 diabetes mellitus in reference to their body mass index (38 obese and 32 non-obese) as a study group compared with 30 apparently healthy subjects (non-diabetic, non-obese) as a control group. Participants in this study were from different hospitals and health centers in Khartoum state, Sudan. Age and gender of the study group were matched with the control group. The serum levels of cardiac markers: CK, AST and LDH were measured using BTS 305 spectrophotometer and commercial kits from Biosystem Company

The mean of the serum levels of total Creatinine kinase of the diabetic and diabetic obese groups were significantly raised ( $P$ . value= 0.043) and ( $P$ =0.021), respectively, whereas, they were insignificantly changed in diabetic non-obese group when compared to that of the control group

The mean of the serum levels of Aspartate aminotransferase level of all diabetic group were insignificantly changed when compared to that of the .(control group ( $P$ = 0.141

The mean of serum levels of lactate dehydrogenase of the diabetic and diabetic obese groups were significantly raised ( $P$ =0.045) and ( $P$ =0.029), respectively, whereas, they were insignificantly changed in diabetic non-.(obese group when compared to that of the control group ( $P$ =0.180

In the diabetic group the serum levels of Creatine kinase, Aspartate transferase and lactate dehydrogenase levels showed insignificant weak positive correlation with both, the duration of the diabetes mellitus and the .body mass index of the patients

هذه دراسة مقطعية أجريت خلال الفترة من مارس إلى أغسطس 2010 لم قارنة مستويات الإنزيمات القلبية (كرياتين كاينيز، أسبارتات ترانسفيريز و لاكتيت ديهايدروجينيز) في 70 سودانيا مصاب بمرض السكري من النوع الثاني بمرجعية معامل كثرة أجسامهم (38بدناء و 32 غير بدناء) كمجموعة دراسة قورنت مع 30 شخصا من الأصحاء ظاهريا (غير المصابين بداء السكري غير بدناء) كمجموعة ضابطة. المشاركون في هذه الدراسة كانوا من مستشفيات و مراكز صحية مختلفة بولاية الخرطوم، السودان. تمت مطابقة العمر والجنس بالنسبة لمجموعة الدراسة مع المجموعة الضابطة. تم قياس الإنزيمات القلبية بإستخدام جهاز قياس الطيف الضوئي والمحاليل التجارية من شركة الأنظمة الحيوية الألمانية.

كان هناك إرتفاع ذو دلالة إحصائية معنوية في متوسط مستويات الكرياتين كاينيز بمجموعة مرضى السكري ومجموعة مرضى السكري البدناء (الإحتمال الإحصائي = 0.043) (الإحتمال الإحصائي = 0.021)، على التوالي، بينما لم تتغير هذه المستويات تعريضاً ذو دلالة إحصائية بمجموعة مرضى السكري غير البدناء عند قورنت مع المجموعة الضابطة.

لم يكن هناك تغيير ذو دلالة إحصائية معنوية في متوسط مستويات الأسبارتات ترانسفيريز في كل مجموعات مرضى السكري عندما قورنت مع المجموعة الضابطة (الإحتمال الإحصائي = 0.141).

كان هناك إرتفاع ذو دلالة إحصائية معنوية في متوسط مستويات اللاكتيت ديهايدروجينيز بمجموعة مرضى السكري ومجموعة مرضى السكري البدناء (الإحتمال الإحصائي = 0.045) (الإحتمال الإحصائي = 0.029)، على التوالي، بينما لم تتغير هذه المستويات تعريضاً ذو دلالة إحصائية بمجموعة مرضى السكري غير البدناء عند قورنت مع المجموعة الضابطة (الإحتمال الإحصائي = 0.180).

في مجموعة مرضى السكري أظهرت مستويات الكرياتين كاينيز، الأسبارتات ترانسفيريز واللاكتيت ديهايدروجينيز بمصل الدم إرتباطاً ضعيفاً ليس ذو دلالة إحصائية مع كلاً من فترة مرض السكري و معامل كثرة أجسام المرضي.

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## Abbreviation

ADA	American Diabetes Association
ADP	Adenosine diphosphate
ATP	Adenosine triphosphate
BMI	Body Mass Index
CK	Creatine kinase
CPK	Creatine phosphokinase
Cr	Creatinine
DKA	Diabetic ketoacidosis
DM	Diabetes Mellitus
ECG	Electro cardio Graph
GDM	Gestational Diabetes Mellitus
HfABP	Heart-type fatty acid Binding Proteins
HLA	Human Leukocyte Antigen
LDH	Lactate Dehydrogenase
MDH	Malate Dehydrogenase
MI	Myocardial Infarction
NHANES	National Health and Nutrition Examinations
NIDDM	Non-insulin dependent diabetes mellitus
PCr	Phospho Creatinine
SGOT	Serum glutamic oxaloacetate
Tn	Troponin

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