

Dedication

To my parents.

To my wife.

To my daughter.

To my family.

Fahmi

Acknowledgments

First and end thanks go to God ("Allah") for helping me to complete this research.

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Abstract

Background. Cardiac troponin T (cTnT) is a cardiac regulatory protein that control the calcium mediated interaction between actin and myosin, TnT is a component of the contractile apparatus of the striated musculature. As a result of its high tissue-specificity, cardiac troponin T (cTnT) is a cardio-specific, highly sensitive marker for myocardial damage.

Objective. This study aimed to measure and evaluate the usefulness of Troponin T and lipid profile in hypertensive patients who had developed chest pain due to cardiac event .

Subjects and Methods. Cardiac troponin T(cTnT) and lipid profile were measured with a quantitative laboratory methods for one hundred hypertensive patients and 100 apparently healthy subjects as a control group. Cardiac troponin T was measured by Elecsys 2010 and lipid profile were measured by enzymatic method.

Results.

The results of this study revealed a significant elevation of troponin T and HDL-C levels in hypertensive patients and also showed a significant correlation between troponin t and total Cholesterol (P value= 0.001, R = 0.341) , there was a significant increase in the levels of troponin T and HDL cholesterol (p<0.05) in hypertensive patients as compared to those in the healthy controls. On applying Pearson's correlation,

in hypertensive patients there was significant correlation between Troponin T and total TC (P- value= 0.001, R = 0.341) , Troponin T and Triglyceride (P-value= 0.029,R = 0.218) , Troponin T and LDL (P- value =0.002 ,R = 0.309) , duration of disease and Troponin T (P-value 0.038 ,R = 0.208) , duration of disease and TC (P-value=0.041, R=0.205) , duration of disease and LDL (P-value= 0.017 , R = 0.238), systolic blood pressure and troponin T (P-value=

0.011 ,R = 0.254), systolic blood pressure and LDL (P-value=0.032, R=0.215), diastolic blood pressure and TC (p-value=0.010, R=0.257) and diastolic blood pressure and LDL (P-value=0.010, R=0.250).

A significant correlations between Troponin T and HDL, body weight and Troponin T, body weight and TC, body weight and TG, body weight and HDL, body weight and LDL, duration of disease and TG, duration of disease and HDL, systolic blood pressure and TC, systolic blood pressure and TG, systolic blood pressure and HDL, diastolic blood pressure and troponin T, diastolic blood pressure and TG and diastolic blood pressure and HDL, P-value >0.05 for all, which were statistically not significant.

Conclusion. This study confirms that the cardiac troponin T can be used as a predictor for the early detection of cardiac event along with the lipid profile markers in hypertensive patients .

المستخلص

كان الهدف من هذه الدراسة هو التحقيق في الفائدة السريرية لتروبونين تي (troponin T) ودهون الدم كعلامات لتشخيص حالة القلب بين مرضى ارتفاع ضغط الدم الذين يعانون من ألم في الصدر. وقد أجريت هذه الدراسة في مستشفى الشعب التعليمي ومركز السودان للقلب بالخرطوم في الفترة من شهر مايو ٢٠١١م إلى يناير ٢٠١٢م.

أجريت الدراسة على ١٠٠ مريض بارتفاع ضغط الدم كمجموعة دراسة (٥٩ من الرجال و ٤١ من النساء، تتراوح أعمارهم من ٢٦ إلى ٧٤ عام) و ١٠٠ متطوع كمجموعة تحكم (٥٤ من الرجال و ٤٦ من النساء، تتراوح أعمارهم من ٣١ إلى ٦٩ عام). وتمت مراعاة تقارب الأعمار الجنس والوضع الاجتماعي والاقتصادي بين المجموعتين.

تم جمع البيانات من خلال التقييم السريري و تعبئة الاستبيان لكل مريض ومتبرع، تم قياس التروبونين باستخدام Elycsys2010 والدهون بواسطة جهاز Humalyzer3000. أجري التحليل الإحصائي عن طريق الكمبيوتر بواسطة برنامج SPSS-16 لمقارنة النتائج بين المجموعتين.

كشفت نتائج هذه الدراسة عن وجود علاقة ذات دلالة إحصائية بين التروبونين والكوليسترول الكلي والتروبونين تي والدهون المنخفضة الكثافة (LDL) وليس هناك ارتباط كبير بين التروبونين والدهون العالية الكثافة (HDL) في مجموعة الاختبار.

كما هو مبين في الجدول رقم ١، كانت هناك زيادة كبيرة في مستويات الكوليسترول و التروبونين و HDL في مرضى ارتفاع ضغط الدم بالمقارنة مع تلك الموجودة في مجموعة التحكم. في مرضى ارتفاع ضغط الدم كان هناك ارتباط كبير بين التروبونين والكوليسترول والتروبونين والدهون الثلاثية ، التروبونين والدهون منخفضة الكثافة ، مدة المرض والتروبونين ، مدة المرض والكوليسترول ، مدة المرض والدهون منخفضة الكثافة ، ضغط الدم الانقباضي والتروبونين ، ضغط الدم الانقباضي والدهون منخفضة الكثافة ، وضغط الدم الانبساطي والكوليسترول وضغط الدم الانبساطي والدهون منخفضة الكثافة وجميعها ذات دلالات إحصائية معتبرة. في الختام يمكن استخدام التروبونين تي باعتباره مؤشرا للكشف المبكر عن أمراض القلب جنبا إلى جنب مع الدهون في مرضى ارتفاع ضغط الدم لمنع الوفيات والأمراض التي ترتبط بارتفاع ضغط الدم.

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Abbreviations

ACC	American College of Cardiology
ACS	Acute Coronary Syndrome
ADP	Adenosine Diphosphate
AHA	American Heart Association
AMI	Acute Myocardial Infarction
AST	Aspartate Transaminase
ATP	Adenosine Triphosphate
BP	Blood Pressure
BPM	Beet Pair Minit
CAD	Coronary Artery Disease
CHF	Congestive Heart Failure
CK	creatine kinase
CK-MB	creatine kinase Muscles and Brain
COPD	Chronic Obstructive Pulmonary Disease
CTnI	Cardiac Troponin I
CTnT	Cardiac Troponin T
CVD	Cardiovascular Diseases
DM	Diabetic Mellitus
ECG	Electrocardiograph
EHR	Embryonic Heart Rate
ESC	European Society of Cardiology
ESRD	End-Stage Renal Disease
HD	Heart Diseases
HDL-C	High Density Lipoprotein Cholesterol
HF	Heart Failure
HTN	Hypertension
LD	Lactate Dehydrogenase
LDH	Lactate Dehydrogenase
LDL-C	Low Density Lipoprotein Cholesterol
LMP	Last Menstruation Period
MI	Myocardial Infarction
M β CD	Methyl Beta Cyclodextrin
NT-proBNP	N-terminal pro-brain natriuretic peptide
PDAY	Pathobiological Determinants of Atherosclerosis in Youth
RF	Renal Failure
SGOT	Serum Glutamic Oxaloacetic Transaminase
STEMI	ST-segment Elevation Myocardial Infarction
TC	Total Cholesterol
TG	Triglycerides
TIMI	Thrombolysis In Myocardial Infarction
TPR	Total Peripheral Resistance
VLDL	Very Low Density Lipoprotein

