

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قال تعالى

{ وَيَسْأَلُونَكَ عَنِ الرُّوحِ قُلِ الرُّوحُ مِنْ أَمْرِ رَبِّي وَمَا أُوتِيتُمْ مِنَ الْعِلْمِ إِلَّا قَلِيلًا }

صدق الله العظيم

سورة الإسراء الآية (85)

## *Dedication*

*To the candle which burns to enlighten life .....*

*Our mothers*

*To the one whom I live for making his dream become true.....*

*Our father*

*To special person who inspired and give us the meaning of being .....*

*Dr. Mohammed AbdElrehaem*

*To those who have made it possible.....*

*Our teachers*

*To whom encouraged me.....*

*Our sisters , brothers and friends*

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*By the grace of Allah and his help we completed this study, all praise to him. Then the increment is for our families for their support.*

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*With a great appraisal and how to be self-dependent and self-confident.*

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## Abstract

This study was conducted during the period to investigate the diagnostic value of cardiac creatine kinase enzyme (CK) and isoenzyme creatine kinase (CK-MB) as myocardial markers has been assessed in this study using spectrophotometer method. A study of 30 Sudanese patient (16 male / 14 female ) admitted Sudan Center for Heart during the period April- June 2012. The patient are of a average age “30-80” years. A group of 30 healthy subjects match in age were enrolled as control group. Blood samples were taken from all patients at first 24 hours to estimate the levels of CK enzyme and CK-MB by using spectrophotometric method. A significant increased of CK enzyme had been observed in MI patients ( $p < 0.05$ ), the average concentration levels ( $257.97 \pm 138.754$ ) when compared to control subjects ( $74.97 \pm 22.785$ ).but there was no statistically difference in CK-MB between patient and healthy control group ( $p > 0.05$ ). but clinically CKMB slight elevated in patient more than control ( $39.17 \pm 11.164$ ), ( $10.60 \pm 5.581$ ) respectively. the mean activities of both total CK and CKMB were not affected by sex ( $p > 0.05$ ). the majority of patients admitted CCU of Sudan center of heart suffering from chest pain attack was at advanced age (40-70) years and had mean activities of total CK and CK-MB were higher than those of patients who have an age less than 40 years.

In conclusion the study confirm that CK-MB is an important diagnostic marker that can be used for detection of myocardial infraction and follow up of patients, particularly when such information cannot be obtained following clinical and ECG examination.

## مستخلص الدراسة

هذه الدراسة تبحث عن قيم الكرياتينيز (المجموع الكلي والايوزوانزيم MB) واستعماله كمؤشر لمعرفة الذبحة القلبية باستخدام قياس الجهاز الهضيز وقد تمت دراسة 30 مريضاً سودانياً (16 رجل ، 14 امرأة) وصلوا لمركز السودان للقلب في الفتره ما بين مايو ويونيو 2012. هؤلاء المرضي اعمارهم بين (30-80) سنة . أخذت عينات الدم من المرضي في فترة 24 ساعة الاولى من الاصابة، وكذلك أخذت 30 عينة من اشخاص اصحاء واستخدمت كحكم وتم اخذ العينات من كل المرضي في 24 ساعة الاولى لقياس مستوي انزيم الكرياتينيز الكلي والايوزوانزيم MB لهذه العينات باستخدام جهاز الضوئي.

اوضحت الدراسة المتحصل عليها ان هناك ارتفاع اضحاً في مستويات المجموع الكلي للكرياتينيز عند المرضي ( $p < 0.05$ ). وقد جد متوسط ارتفاع ( $257.97 \pm 138.754$ ) عند قارنتهم بالاشخاص الاصحاء ( $74.97 \pm 22.785$ ) وان هنالك ارتفاع واضحاً في مستوي الكرياتينيز ايزوانزيم MB عند المرضي ( $39.17 \pm 11.164$ ) عند مقارنته بالاضخاص الاصحاء ( $10.60 \pm 5.581$ ).

واوضحت الدراسة ان متوسط نشاط مستوي الكرياتينيز ايزوانزيم MB لا يتاثر بنوع الجنس ( $p > 0.05$ ) عظم المرضي الذين يعانون من الام الصدر وادخلوا العناية المكثفة في مركز السودان للقلب ذوي اعمار متقدمة تتراوح بين 30-80 سنة، وجد ان متوسط نشاط الكرياتينيز ايزوانزيم MB أعلي م المرضي الذين اعمارهم اقل من 40 سنة.

هذه الدراسة تؤكد ان قياس مستوي الكرياتينيز يمكن ان يساعد التشخيص بحالات الاحتشاء القلبي في السودان ومتايعتها خاصة عند لا تتوافر المعلومات السريرية الكافية وفحوصات تخطيط القلب (ECG).

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## List of abbreviation

MI	Myocardial infarction
CHD	Coronary heart Disease
AMI	Acute Myocardial Infarction
WHO	World Health Organization
DCM	Dilated cardiomyopathy
HCM	Hypertrophic cardiomyopathy
ARVC	Arrhythmogenic right ventricular cardiomyopathy
RCM	Restrictive cardiomyopathy
CHF	congestive heart failure
CCF	congestive cardiac failure
ECG	Electrocardiography
CK-MB	creatine kinase-MB
HDL	high density lipoprotein
HER	embryonic heart rate
BPM	beats per minute
SA	sinoatrial node
AV	atrioventricular node
PDAY	Path biological Determinants of Atherosclerosis in Youth
CVD	cardiovascular disease
LA,RA,LL	left arm , right arm and left leg
LDH	Lactate dehydrogenase
AST	Aspartate aminotransferase
GPBB	Glycogen phosphorelase
CRP	C reactive protein
AMA	Ischemic modified albumine
ATP	adenosine triphosphate
PCr	phosphocreatine
ADP	adenosine diphosphate
CKm	mitochondrial creatine kinase
CK-MM	creatine kinase-Muscel

CK-BB	creatine kinase-Brain
HK	Hexo kinase
SPSS	Statistical package for Social Science

