

DeDication

To WHoME HEr prayErs arE THE sEcrET of My succEss

My Mother

To soul of my faTher,

my brothers,

my sisters,

my l ove, the source of my happiness

my best friends,

Obaid ,MaMd0uh ,OMer far0ug ,M0hand ,asiM ,naser al l a
,Mosayb ,ahMed .

To any person who l earn me ...

I dedlcate my research

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List of Abbreviations

CK	Creatine kinase
CPK	Creatine phosphokinase
TPO	Thyroxine peroxidase
Tg	Thyroglobulin
OATP1C1	Organic Anion Transporting Polypeptide 1C1
MCT8	Monocarboxylate Transporter 8
Na ⁽⁺⁾ /H ⁽⁺⁾	Sodium/Potassium
TBG	Thyrotropin binding globulin
DNA	Deoxyriboneucliec Dcid
SRIH	Somatostatin
PTH	Parathyroid hormone
TPOAb	Thyroid peroxidase antibodies TgAb
	Thyroglobulin Antibodies
EC	Enzyme commission
ATP	denosine triphosphate
PCr	Phosphocreatine
ADP	Adenosine diphosphate
ATPases	Adenosine Triphosphatases
CK-MM	Skeletal muscle creatine kinase
CK-MB	Cardiac creatine kinase
CK-BB	Creatine kinase
mtCK	Mitochondrial creatine kinase

Abstract

This study was conducted in Khartoum state in Military Hospital to compare creatine kinase (CK) level and thyroid hormones in thyroid dysfunction patients with healthy individuals. To do this hundred adult Sudanese individuals aged (19 – 76 years) were participate in the study (25male:75female), as study group (50 with hyperthyroidism : 50 hypothyroidism) in addition to fifty with normal thyroid function as control group .

At $P < 0.05$ estimated Creatinine Kinase was significantly decrease in patients with hyperthyroidism and significantly increase in patients with hypothyroidism compared with the control group (P-value 0.000). The results were formed to be as follow:

(18 ± 6 U/L) versus (109 ± 38 U/L) for hyperthyroidism and (335 ± 119 U/L) versus (109 ± 38 U/L) for hypothyroidism. Significant correlation found between total CK, age and sex in hyperthyroidism and hypothyroidism P-value (0.04, 0.05), (0.04, 0.03) respectively. Also there was Significant correlation detected between total CK and TSH in hyperthyroidism and hypothyroidism with p-value (0.05) and (0.003) respectively.

Significant correlation between total CK and T4 & T3 in hyperthyroidism with p-value less than 0.05 ,p-value is (0.04) for both ,also there was significant correlation between CK and T4&T3 in hypothyroidism with p-value (0.04&0.03) respectively. This study demonstrated that hyperthyroidism decrease total serum CK level ,in contrast hypothyroidism can elevate total serum CK level .Also the study found that there was positive correlation in creatine kinase and thyroid stimulating hormone (TSH) and negative correlation with thyroxine (T4) and triiodothyronine (T3). CK level must be assessed and screened for patients with thyroid dysfunctions.

الخلاصة

أجريت هذه الدراسة في ولاية الخرطوم، مستشفى السلاح الطبي بغرض مقارنه مستوى الكرياتين كابينيز و هرمونات الغدة الدرقية عند مرضى قصور الغدة الدرقية مقارنة برصفتهم الاصحاء. شملت الدراسة مائة وخمسين مشاركا من السودانيين البالغين تتراوح اعمارهم بين (19-70 سنة) مائة منهم يعانون إعتلال الغدة الدرقية (75 انثى:25 ذكر) كمجموعة دراسة (50 مصابين بفرط نشاط الغدة الدرقية :50 مصابين بالقصور في الغدة الدرقية) بالإضافة الى خمسين (23 ذكر:27 انثى) مع وظيفة الغدة الدرقية العادية كمجموعة ضابطة.

عند $P\text{-value} (<0.05)$ كان مستوى الكرياتين كابينيز ينقص نقصانا ملحوظا في المرضى المصابين بفرط نشاط الغدة بينما يرتفع ارتفاعا ملحوظا لدى المرضى المصابين بقصور الغدة الدرقية مقارنة مع المجموعة الضابطة ($P\text{-value} (0.000)$) وكانت النتائج كما يلي:

مستوى الكرياتين كابينيز في مجموعة الدراسة كان ($18\pm6\text{U/L}$) ضد ($109\pm38\text{U/L}$) في المرضى المصابين بفرط نشاط الغدة الدرقية بينما كان ($335\pm115\text{U/L}$) ضد ($109\pm38\text{U/L}$) في مرضى قصور الغدة الدرقية.

في حين وجد ارتباط كبير بين مستوى الكرياتين كابينيز الكلي والعمر والجنس في فرط نشاط و قصور الغدة ($0.05,0.04$) و ($0.03,0.04$) $P\text{-value}$ على التوالي كما كشفت الدراسة ان هناك ارتباط كبير بين مستوى الكرياتين كابينيز الكلي وهرمون تنشيط الغدة الدرقية في فرط نشاط و قصور الغدة (0.003) و (0.05) $P\text{-value}$ على التوالي. وايضا هناك ارتباط بين مستوى الكرياتين كابينيز وهرموني الثايروكسين والتراي ايودوثايرونين في فرط نشاط الغدة (0.04) $P\text{-value}$ لكل منهما، وفي قصور الغدة ($0.04, \&0.03$) $P\text{-value}$ على التوالي.

وخلصت الدراسة الى أن فرط نشاط الغدة الدرقية يؤدي الى إنخفاض مستوى الكرياتين كابينيز الكلي في المصل، بينما يرتفع مستوى الكرياتين كابينيز في قصور الغدة، وأن هناك علاقة إيجابية بين هرمون تنشيط الغدة ومستوى الكرياتين كابينيز وعلاقة سلبية بينه وهرموني الثايروكسين والتراي ايودو ثايرونين. يجب فحص مستوى الكرياتين كابينيز في مرضى إعتلال الغدة الدرقية.