

الآية :

قال تعالى:

{... رَبِّ أَوْزِ عِيَانِ أَنْ أَشْكُرَ نِعْمَتَكَ الَّتِي أَنْعَمْتَ عَلَيَّ وَعَلَىٰ وَالِدَيَّ وَأَنْ أَعْلَىٰ صَالِحًا

تَرْضَاهُ وَأَخِطِي بِرَحْمَتِكَ فِي عِبَادِكَ الصَّالِحِينَ} [1].

سورة النمل (الآية 19)

Dedication

This study is dedicated to my family, my teachers, my fiancé and my Friends.

Acknowledgement

Thanks to Allah, without Him nothing can come into existence. I am also grateful to my supervisor Dr. Salah Ali Fadlalla and teachers for what they have done for me pertaining to this study. Many thanks also due to my colleagues for their support and encouragement, and last but not least I would like to thank the Radiation and isotopes Centre-Khartoum (RICK) workers, especially the staff of the department of Nuclear medicine including the Radioimmunoassay (RIA) staff, for their kind corporation to accomplish this work.

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List of Abbreviations:

Abbreviation	Term
TSH	Thyroid Stimulating Hormone
T4	Tetra-iodothyronine
T3	Tri-iodothyronine
RICK	Radiation & Isotopes Centre-Khartoum
TFT	Thyroid Function Test
RIA	Radioimmunoassay
IRMA	Immunoradiometric assay
TG	Thyroid Globuline
TPO	Thyroid Peroxidase
S.S.N	Suprasternal notch
GD	Grave's disease
ATA	American Thyroid Association
T1/2	Half Life Time
PTU	Propylene Thiomacil
Nmol/L	Nanomol per liter

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Abstract

A radioactive Technetium pertechnetate ($^{99m}\text{TcO}_4$) uptake by thyroid gland is often performed to evaluate its functional status. This study is aim to see how accurate this uptake correlates with the Tri-iodothyronine (T3), Tetra-iodothyronine (T4) and thyroid stimulating hormone(TSH), radioimmunoassay (RIA) levels were studied in a total of 100 adult patients in the age ranged between 20 to 60 years, who were referred to the department of Nuclear Medicine in the Radiation and Isotopes-center of Khartoum (RICK) for thyroid radioactive Technetium pertechnetate uptake and Thyroid function Test (TFT), respectively. It was observed that there was a significant positive correlation between thyroid uptakes of ($^{99m}\text{TcO}_4$) values and T3($p < 0.01$) & T4 ($p < 0.01$) values , but a negative insignificant correlation was observed with values of TSH ($p > 0.01$).

المخلص

فحص إمتصاص الغدة الدرقية لعنصر التكنيشيوم99م المشع غالبا ما يتم إستخدامه لتقويم حالة الغدة الدرقية وأدائها الوظيفي ، تهدف هذه الدراسة إلي تحديد الي أي درجة دقيقة يرتبط مستوي ذلك الإمتصاص مع مستويات هرمون الغدة الدرقية وهي ثلاثي مجموعات اليود ، هرمون الغدة الدرقية رباعي مجموعات اليود وهرمون تحفيز الغدة الدرقية المقاسة بتقنية القياسات المناعية الإشعاعية وذلك ما تمت دراسته علي عدد "100" مريض بالغ في الفئة العمرية (20-60) سنة والذين تم تحويلهم من مختلف المستشفيات و العيادات الخاصة إلي قسم الطب النووي و وحدة القياسات المناعية الإشعاعية بالمركز القومي للعلاج بالأشعة والطب النووي لإجراء فحوصات إمتصاص الغدة الدرقية لعنصر التكنيشيوم المشع وفحوصات مستويات هرمونات الغدة الدرقية بالترتيب . لوحظ أن هناك علاقة إيجابية كبيرة إحصائيا بين قيم إمتصاص الغدة الدرقية لعنصر التكنيشيوم المشع مع قيم هرمون الغدة الدرقية ثلاثي مجموعات اليود وهرمون الغدة الدرقية رباعي مجموعات اليود ، ولكن لوحظ وجود علاقة سلبية ضئيلة إحصائيا بينها وبين قيم فحوصات هرمون تحفيز الغدة الدرقية .

