Sudan University of Science and
Technology College of Graduate Studies

Study of Polycystic Ovarian Syndromeby Using Ultrasound

دراسة حالة تكيس المبايض باستخدام الموجات فوق الصوتيه

Thesis submitted as partial fulfillment for the degree of

M.Sc. in Diagnostic Radiological Technology

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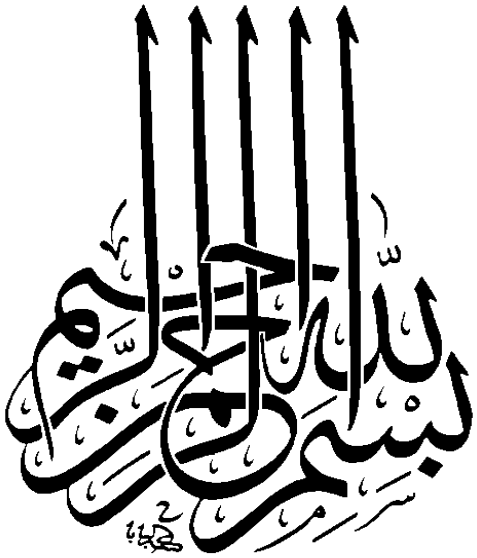
بسم الله الرحمن الرحيم

آيـة

قال تعالى:

وَ(قُـل اعْمَـلُـوا فَـسَيَـرَى
ُ ُ َّ اللّه عَمَـلَـكُمْ وَرَسُـولُـهُ
وَ الْـمُـؤْمِـنُـونَ)

صدق الله العظيم

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Dedication

To My Parents Hope AlmightlyGod"S

Mercy OverwelmingBoth

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Abstract

Polycystic ovarian syndrome (PCOS) IS merely a reproductive and endocrinological disorders affecting 5% to 10% of the female population in their reproductive years.&characterized by multiple cysts in the ovaries which can impair ovulation and therefore fertility. One common feature of the condition is raised levels of the 'male' hormone *testosterone*, which can lead to 'masculinising' side effects such as 'hirsutism' (abnormal, excessive hair growth), scalp hair loss, and acne thatcan cause severe depression to the woman

Another key underlying biochemical feature of PCOS is raised levels of *insulin*, usually related to '*insulin resistance*' (impaired functioning of insulin).

It is a harbinger of a lifelong condition that can lead to serious sequelae such as diabetes mellitus, hyperlipidemia, endometrial hyperplasia/carcinoma, central obesity, sleep apnea& depression.

The main objective of this study is to achieve accurate diagnosis of PCOS using the prober materials and methods such as labrotary biochemical testing &hormonal analysis using many radioimmunoassays, especially platform assays, for androgens are decidedly unsatisfactory which bypassed by using liquid chromatography-tandem mass spectrometry (LM/MS-MS), the modern gold standard for all steroid hormone measurement, particularly in women.and by using transvaginalultrasoundwhich is superior to the abdominal one.

This study done in Saqr Hospital –RasAlKhaima- United Arab Emirates,it was a retrospective study done on a thirty three women

of different nationalities,agegroup&different marital status presented with different clinical pictures.

The most common complaints that has been noticed in the study group is the period irregularity in a percentage of 63 followed by a complaint of hirsutism/acne which is 42% and a few presented with infertility 6.1%.Followed by obesity and rapid weight gain. All these cases underwent hormonal assays using the sensitive radioimmunoassay –the liquid chromatography-tandem mass spectrometry (LM/MS-MS) which confirm the diagnosis of PCOS excluding only two cases one withprimaryhyperprolactinaemia and the other was a hypothyroidism.

More efforts has been made to reach a proper & accurate diagnosis to achieve cure& to avoid longterm complications of PCOS by

subjecting all suspected cases to abdominal ultrasound and repeat it by using the transvaginal one wherever possible as there was some unmarried cases where only abdominal ultrasound can be done. The study reveals eighteen missed caseswhen TVS done after the abdominal ultrasound.81% of cases, the Diagnosis of PCOS were established by using TVS Therefore; TVS should be done whenever possible to all suspected cases to attain proper diagnosis of PCOS supported by other confirmatory criteria such as liquid chromatography - tandem mass spectrometry (LM/MS-MS).

مستخلص الدراسه

تكيس المبايض عبارة عن اضطرابات هرمونية تنعكس سلبا على خصوبة المرأة وتصيب حوالي 5-10% من السيدات بالعالم أثناء فترة خصوبتهن.وتتميز بوجود العديد من الأكياس بالمبيضين الشيء الذي يعيق التبويض والخصوبة ومما يميز هذه الحالة أيضاً وجود ارتفاع في نسبة الهرمونات الذكرية عند المريضة والذي يؤدى إلى ظهور بعض المظاهر الذكورية كنمو شعر الذقن وشعر بالبطن وكذلك ظهور بثور بالوجه الشيء الذي يصيب السيدة بالإحباط. وتكون أيضا عرضة لحدوث مرض السكري نسبة لوجود مقاومة لعمل هرمون الأنسولين وارتفاع نسبة الدهون والسمنة والإصابة بأمراض القلب وكذلك سرطان الرحم ولتفادى كل هذه المضاعفات كان الهدف من عمل هذه الدراسة والتي تهدف للتشخيص الدقيق والسليم للحالة وذلك بعمل الفحوصات اللازمة واستخدام كل المعدات والوسائل الدقيقة لذلك كعمل فحص الهرمونات الذكورية والهرمونات الأخرى المتعلقة أو المسببة للحالة وعمل الموجات الصوتية المهبلية دون البطنية وذلك لدقتها في التشخيص.حيث أن الموجات الصوتية المهبليه شخصت كل الحالاتالتى كان بالإمكان عمل الموجات الصوتية المهبلية لها بينما تلك البطنية لم تشخص ثمانية عشرة حالة.هذه الدراسة كانت لخمس وثلاثون خالة عدا حالتين أستثنيت فالتشخيص نم عن وجود حالة ارتفاع هرمون الحليب والأخرى هبوط بهرمون الغدة الدرقية وكانت بقيت الحالاتلسيدات من مختلف الجنسيات والأعمار والحالة الاجتماعية جئن بمختلف الشكاوى وكانت شكوتهن من اضطرابات الدورة الشهرية أكثرهن بنسبة63% حدوثا تليها نمو الشعر بالوجه ووجود البثوربنسبة 42% وقد تم تشخيص الخالة مستعملين طرق فخص الهرمونات الحديثة والدقيقة (LM/MS-MS) وكذلك باستعمال الموجات الصوتية المهبلية ما امكن والتى ساهمت فى تشخيص 81% من الحالات لذلك كانت التوصية باستخدام-LM/MS MS والموجات الصوتية المهبلية.

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LIST ABBREVIATIONS

PCOS : Polycystic Ovarian Syndrome

TVS: Transvaginal ultrasound

LM/MS-MS: Liquid chromatography-TandomSpectrometry

TSH: Thyroid stimulating hormone

LH:Liutenizing hormone

FSH: Follicular stimulating hormone

DEHA:Dehydroepiandrosterone