

Dedication

- To the Soul of my dear and beloved mother
- To my father ,brothers, sisters
- To my friends
- And to my colleague

Acknowledgement

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ملخص الدراسة

هذه الدراسة علمية وعملية وأجريت خلال يوليو 2007م إلي سبتمبر 2009م طبقت بجمهورية السودان ولايتي الخرطوم (مستشفيات الخرطوم , ام درمان التعليمية وكلية علوم الأشعة الطبية) و الجزيرة (قرية التي حوالي 78 كيلو متر من الخرطوم). ناقشت الدراسة تقييم المسح بالموجات فوق الصوتية وهرمون البروستاتا المضاد الجيني المحدد الحر في تشخيص أمراض البروستاتا والتميز بين سرطان البروستاتا والورم الحميد وأيضا للمقارنة بين هذه الوسائل مع هرمون البروستاتا المضاد الجيني المحدد الكلي .

هنالك (100) مريض اختيروا عشوائيا ولكن جميعهم لديهم أعمار اكبر من 40 سنة , لديهم علامات أمراض البروستاتا ومرسلين بواسطة الطبيب . كل مريض لديه التهابات في المجاري البولية أو عمر اقل من أربعين سنة ابعده من هذا الدراسة.

كل هؤلاء المرضى فحصوا بالموجات فوق الصوتية باستخدام مساحات هوندا الوكا وجنرال اليكترىك بطاقة مقدارها 3.5 ميغا هرتز وفحوصات مختبرية (هرمون البروستاتا المضاد الجيني المحدد الكلي و الحر وفحص الأنسجة).

اجري المسح عن طريق البطن لكل المرضى وتم قياس البعد الأمامي الخلفي , العرضي , السمك , حجم البروستاتا , تقييم شكل ومظهر البروستاتا ثم قياس هرمون البروستاتا المضاد

الجيني المحدد الكلي والحر وأخيرا اجري فحص الأنسجة لكل المرضى .

الباحث استخدم معدل لملامح الموجات فوق الصوتية فى هذه الدراسة وتم فيه إعطاء كل ملامح فى الأبعاد , الحجم , شكل ومظهر البروستاتا درجة محددة وتم جمع المعدل لكل مريض لديه سرطان البروستاتا لمعرفة اقل معدل يمكن أن يوجد عند أي مريض لديه سرطان البروستاتا . أيضا لتحليل النتائج استخدم الباحث التحليل الخطي والتمييزي .

هذه الدراسة وجدت أن هنالك 20 مريض (20%) من المرضى لديهم سرطان 78(78%) لديهم تضخم البروستاتا الحميد ومريضين (2%) لديهم تغيرات التهابية.

وأيضا وجدت إن العمر عامل خطورة لأمراض البروستاتا.

الدراسة أوجدت أن هرمون البروستاتا المضاد الجيني المحدد الكلي غير موثوق فيه وغير دقيق في تشخيص أمراض البروستاتا والفحص بالموجات فوق الصوتية وهرمون البروستاتا المضاد الجيني المحدد الحر أدق في تشخيص والتمييز بين أمراض البروستاتا من هرمون البروستاتا المضاد الجيني المحدد الكلي .

الدراسة عرضت أن هنالك 18 مريض (90%) من 20 مريض لديهم سرطان البروستاتا سجلوا قيمة لهرمون البروستاتا الجيني المضاد الكلي اكبر من 10 نانو/ملي , هرمون البروستاتا المضاد الجيني المحدد الحر اكبر من 2 نانو/ ملي ونسبته إلى الهرمون الكلي اقل من 1/4 . هذا يعني إن زيادة هرمون البروستاتا الجيني المضاد الحر تزيد احتمالية الورم الحميد وزيادة هرمون

البروستاتا الجيني المضاد المرتبط ببروتين ألفا المضاد للكيمو
تربيين في الدم تزيد احتمالية سرطان البروستاتا.

بالإضافة إلى ذلك الدراسة عرضت إن ملامح الموجات فوق
الصوتية لسرطان البروستاتا هي تغيير في شكل البروستاتا 7
مرضى (35%) من 20 مريض لديهم سرطان , أو تغير
مظهرها مع وجود أورام 19 مريض (95%) وهذه الأورام يمكن
أن توجد في وسط أو طرف البروستاتا (شكل غير طبيعي أو
مظهر غير طبيعي) . مع زيادة البعد العرضي للبروستاتا حيث
يكون اكبر من البعد الأمامي الخلفي.

باستخدام التحليل الخطي والتمييزي توصلنا إلي معادلات يمكننا
عن طريقها التنبؤ بالحالة المرضية على أنها سرطان , تضخم
حميد أو التهاب , باستخدام هرمون البروستاتا الجيني المضاد
الكلبي, هرمون البروستاتا الجيني المضاد الحر, وملامح صورة
الموجات فوق الصوتية , مما يدل على انه لا يوجد أي من هذه
الوسائل الثلاث (فحص هرمون البروستاتا المضاد الجيني
المحدد الكلبي, هرمون البروستاتا (غير المرتبط) الحر , أو
الموجات فوق الصوتية) قادر لوحده على تحديد نوع المرض
هل هو سرطان أم تضخم حميد (100%).

هذه الدراسة أوصت بأنه كل رجل لديه عمر اكبر من خمسون
سنة أو لديه نشاط جنسي عالي يجب إن يفحص بالموجات فوق
الصوتية دوريا لاستخلاص وجود أمراض البروستاتا لان الموجات
فوق الصوتية رخيصة , آمنة وموثوقة أكثر من هرمون البروستاتا
المضاد الجيني المحدد الكلبي.

ABSTRACT:

This is a scientific and practical study which was done during July-2007 to September 2009 and was carried out in Sudan-Khartoum(Khartoum, Omdurman teaching hospitals and college of Medical Radiologic Sciences), and AlGazeera (Alti village – about 78 Km from Khartoum) states.

The study discusses the evaluation of U/S Scanning and fPSA in diagnosing of the prostate disorders and differentiation between ca prostate and BPH, also to compare these tools to tPSA.

A total of “100” patients were selected randomly; all those patients have age above forty years, have signs of prostatic disorders and referred by physician. Any patient has urinary tract infection or has age less than forty was excluded from this study.

All patients were subjected to be examined by U/S scanning using ‘Honda’ Aloka and General Electric scanners with 3,5MHz probe and laboratory investigations which including (tPSA, fPSA and histopathology).

Trans abdominal Scanning were performed for all patients and measured AP, transverse, thickness and volume of the prostate, then evaluates the shape and texture of the prostate, then measured their tPSA, fPSA and finally histopathology was done for all patients.

The author use Ultrasound findings score in this study; in which any finding in diameters, volume, shape and texture of the prostate, gave specific degree and sum the score of any patient with prostate cancer, to show the less score in which the patient should have prostate carcinoma. Also for data analysis the author uses the crsstabulation, linear regregation and discriminant analysis.

This study found that there were 20 patients (20%) have cancer, 78 patients (78%) have BPH, and two patients (2%) have inflammatory changes. Also it found that the age is a risk factor for prostatic disorders.

Study revealed that the tPSA is not reliable and accurate in diagnosis of prostatic disorders, U/S scanning and fPSA are more accurate in diagnosis and differentiation between prostatic disorders than tPSA.

The study showed that 18 patients (90%) out of 20 cases with prostate carcinoma recorded tPSA more than 10ng/ml, fPSA more than 2ng/ml and fPSA/tPSA ratio less than 1/4. This means that decreasing of fPSA increasing the probability of cancer and increasing of fPSA increasing the probability of BPH "the cancer increased the bound PSA with α - Antichemotrypsin protein ,while the BPH increased the free PSA in blood.

In addition to that the study shows that; the U/S findings of the prostate cancer mostly changes shape 7 patients (35%) out of 20 cases with cancer, or changed texture with presence of nodule 19 patients (95%), which may be present in centre or peripheral of prostate (Abnormal shape

or abnormal texture) with transverse diameter of prostate is greater than AP diameter of prostate.

By using linear and discriminant analysis study found that there were three equations by which, we could predict the type of disease in any case (Ca, BPH or inflammation) by using tPSA, fPSA and U/S features (AP, transeverse, thickness, shape, and texture of prostate), this means that; no one of these three tools (t PSA, fPSA and U/S scanning) can determined the type of disease alone if it is Ca or BPH accurately 100%.

This study recommended that any man has age greater than fifty years or has high sexual activity should be scanned by U/S routinely to exclude the presence of prostatic disease, because U/S is cheep ,safety, and reliable than tPSA.

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List of Appreviations

| | |
|-------------|--|
| PSA | Prostate Specific Antigen |
| fPSA | Free Prostate Specific Antigen |
| tPSA | Total Prostate Specific Antigen |
| BPH | Benign Prostatic Hyperplasia |
| BNH | Benign Nodular Hyperplasia |
| Ca | Cancer |
| DRE | Digital rectal examination |
| CZ | Central zone |
| PZ | Peripheral zone |
| TZ | Transitional zone |

TRUS

Tras rectal ultrasound

TNM

Tumor node metastasis

AP

Anteroposterior

CT

Computed Tomography