

**Sudan University for Science and Technology
Collage of Graduate Studies**

**Evaluation of the Follow up and Incidence for Abdominal
Cancer Patients Using CT (RICK -2008)**

تقييم متابعة و حدوث الأورام القطنية لمرضى السرطان بواسطة الأشعة المقطعية
(مركز النظائر المشعة – الخرطوم 2008)

**A thesis Submitted for Partial Fulfillment of the Requirement
of M. Sc. Degree in Diagnostic Radiologic Technology**

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Dedication

**I dedicate the Fruits of this research, to
My parents
To My Family
To My Beloved husband and son
And to those who are so
helping.**

Acknowledgement

*All thanks to our lord Allah who discriminate us with mind so
as to use it for having knowledge and awareness about his
majesty*

*I would like to thank every one in the radiation and isotope
center of Khartoum for their help.*

*I would like to thanks my supervisor Dr. Mohammed Ahmed
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*My acknowledgement to my husband who help, encourage
and support me to perform and finalize this study*

*Thank you, without your presence, this word will never see
the light*

Evaluation of the Follow up and Incidence for Abdominal Cancer Patients Using CT (RICK -2008)

Abstract

The assessment of abdominal tumors radiotherapy has been carried out using CT image, to evaluate whether there are residual cancer foci after radiation therapy i.e. recurrence after radiation therapy. The targeted abdominal organs in this study are the esophagus, stomach, small intestine, large intestine, Liver, spleen, kidney, Pancreas and gall bladder.

The collected data about the cancer patients in 2008 were the age, gender, organ involved, tribe, geographical region and the recurrence cases percent. The collected data were analyzed using EXCELL soft ware after a CT image was performed for the (100) patients during the first follow up appointment which was after 1 month of treatment.

The analysis of the data shows that: the abdominal organs tumor is predominated among male relative to female with 51% among male and 49% respectively.

Also the analysis shows that: the abdominal cancer incidence could occur in the 3rd. decades and predominated among elderly people from 40 up to 66 years old. And the correlation between the cancer incidence and the patient Ages reveal that: the cancer incidence has a direct proportional with the ageing i.e. as the age increase the cancer incidence increases with the following equation: $y = 0.19x + 4.6$ where y refers to the incidence and x refers to age.

The study also shows that: the predominant abdominal cancer incidence was among Arab Aljazeera Medani (23%) (Arab descendant), Foor (11%) (African descendant) and Jaaleiya (11%) Bani-Amir (8%), Bagara (7%), Hadandawa (5%) and Danagla (4%). }

While the common susceptible abdominal organ for cancer is the esophagus with 36%, Liver 18%, Pancreas 10%, large bowel 10%, stomach 7% , and gall bladder with 6% incidence.

The study also reveal that: out of the total patient (100) who were receive radiotherapy during 2008, about 37.3% were suffering of recurrence cases, 48.2% were presented with cancer secondary i.e. cancer metastasis and 14.2% were never seen for follow up.

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الخلاصة

تم تقييم العلاج بالأشعة للأورام القطنية بواسطة التصوير بالأشعة المقطعية لرؤية ما اذا كانت هناك ثانويات سرطانية بعد العلاج أو حالات انتكاسة للمرض.

الأعضاء المستهدفة في هذه الدراسة هي: المريء ، المعدة ، الأمعاء الدقيقة ، الأمعاء الغليظة ، الكبد ، الطحال ، الكلى ، البنكرياس و الحوصلة الصفراء .

البيانات التي جمعت عن مرضى السرطان للعام 2008 هي: العمر ، النوع ، العضو المصاب ، القبيلة ، الأقليم و حالات الانتكاسة .

تم تحليل البيانات بواسطة برنامج أكسيل بعد اجراء التصوير المقطعي للمرضى (100 مريض) خلال أول متابعة دورية للمرضى بعد مضي شهر من العلاج بالأشعة.

أوضح التحليل الاتي :

الأورام القطنية سائدة في عنصر الرجال (الذكور) بنسبة 51% مقارنة بعنصر النساء (الاناث) ذوي النسبة 49% ، و هي تحدث في العقد الثالث من العمر و تسود في الأعمار الكبيرة من 40 الى 66 سنة .

أيضا وجدت العلاقة بين حدوث السرطان و العمر ، و التي بينت ان هناك علاقة خطية – طردية بنوع المعادلة الاتية : $y = 0.19x + 4.6$ حيث y تشير الى العمر و x تشير الى حدوث السرطان .

كما أوضحت الدراسة ان حدوث السرطان للأعضاء القطنية يسود في قبائل الجزيرة (مدني) ذوي الأصل العربي بنسبة 11% و قبيلة الفور ذات الأصل الأفريقي و قبيلة الجعليين ذات الأصل العربي بنسبة 11% و قبيلة البني عامر و الهدنوا (شرق السودان) بنسبة 8% و 5% على التوالي و قبيلة البقارة (غرب السودان) 7% و قبيلة الدناقلة (شمال السودان) بنسبة 4% .

كما أوضحت الدراسة ان من أكثر الأعضاء قابلية للأصابة بالسرطان هي: المريء بنسبة 36% ، الكبد بنسبة 18% ، البنكرياس بنسبة 10% ، الأمعاء الدقيقة بنسبة 10% ، الأمعاء الغليظة بنسبة 10% ، المعدة بنسبة 7% و الحويصلة الصفراء بنسبة 6% .

أيضا أظهرت الدراسة ان من بين مرضى السرطانات القطنية (100 مرض) الذين تلقوا العلاج بالأشعة خلال عام 2008 ، 37.3% منهم يعني من حالات الانتكاسة 48.2% منهم لديهم حالات نشوء سرطان ثانوي و 14.2% منهم لم يوجدوا خلال المتابعة .

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LIST OF ABBREVIATION

ABBREVIATION	FULL NAME
Ca	Carcinoma
CT	Computed tomography
CM	Centimeter
3D	Three dimension
FAP	Familial adenomatosis polyposis
Ft	Feet
FOV	Field of view
GIT	Gastro intestinal tract
Gy	Gray
HNPCC	Hereditary non polyposis colorectal cancer
HBV	Hepatitis B virus
HCV	Hepatitis C virus
HU	Hounsfield unit
I.V	Intra venous
Kg	Kilo gram
L	Lumber
ML	Millimeter
M	Meter
MRI	Magnetic resonance imaging
NM	Nuclear medicine
Pt	Patient
PET	Positron emission tomography
RICK	Radiation and isotopes center of Khartoum
T	Thoracic
US	Ultra sound
VHL	Von hippel – landau
WW	Window width
WL	Window level