

Dedication

**I dedicate this work to my Dad soul that will be with me every time every where, my
Mam may Allah keep her safe and happy always, and my lovely family**

Acknowledgment

Deep thanks and appreciate to my smart teacher who support me all time during this study Dr. Mohamed Elfadil

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Abstract

The main objective of this study was to estimate dose received by sensitive organs in cervical carcinoma irradiation, out of 200 patients referred to Radiation and Isotopes Center of Khartoum (RICK), that patients received a radical radiotherapy course for stage I and II without hematologic spread. The collected variables were the organs position and depth, patient's separations, equivalent field size, percentage depth dose DD% and back scatter factor. The graphs and correlation were carried out using EXCELL software under windows and the analysis of results showed that: the bladder, cervix and rectum were situated parallel to each other from anterior to posterior respectively and they have linear correlation in depth wise with patient separation.

The result of this study showed that the average dose received by OAR 'bladder, rectum, and head of femur', were 4611 ± 400.3 , 4449 ± 553.7 and 4611 ± 439.7 respectively.

المستخلص

الهدف الاساسي لهذه الدراسة هو تقدير الجرعة الاشعاعية الممتصة بواسطة الاعضاء الحرجة داخل الحقل الاشعاعي في حالة علاج سرطان عنق الرحم في مراحله الاولى علاجا اشعاعيا جذريا من الخارج. مئتان مريض خضعوا لهذه الدراسة، ولقد تم اجراء الدراسة بالمركز القومي للعلاج بالاشعة والطب النووي الخرطوم 2013.

وعليه استنادا للمتغيرات لعنق الرحم والاعضاء الحرجة من مثانة ومستقيم ومفصل الورك وباستخدام (اكسل) تم الحصول على رسومات وعلاقات، والنتيجة اوضحت ان المثانة وعنق الرحم والمستقيم وهي اعضاء متوازية من حيث الموقع من الامام الى الخلف على التوالي بان هناك علاقة خطية بين عمق العضو وحجم المريض. وكان متوسط الجرعة الممتصة بواسطة المثانة والمستقيم ومفصل الورك علي التوالي كالاتي وهو في حدود الجرعة المسموح بها مقارنة بالدراسات السابقة.

$4611 \pm 400.3\text{cGy}$, $4449 \pm 553.7\text{cGy}$ and $4611 \pm 439.7\text{cGy}$

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