

## **Dedication**

To my Grandmother

My Parents,

My Teachers,

My friends,

And my lovely family .

## **Acknowledgements**

First I would like to express gratitude to my supervisor **Dr. HUSSIEN AHMED HASSAN** for his support, help and guidance. My deep gratitude to **Dr. Ahmed Mustafa Abokunna** , **Dr. SUHAIB ALAMEEN** , **Mr. Mahadi Adam Mahadi** **Mr. MUSTAFA AWAD** & Miss. Sultana Awad.

Special gratitude to my Friends and family.

## Abstract

Computed Tomography (CT) is a diagnostic imaging modality giving higher patient dose in comparison with other radiologic procedures, so the calculation of patient dose in CT exams is very important. CT improved many diagnoses of diseases. The increasing use of CT in Sudan in recent years is what has to think in the attempt to reduce the exposure of the patient and that the risks known to the X-ray. This study aimed to evaluate the radiation dose resulting from exposure to X-rays during CT .

A total of 30 patients (adults males and females) were examined in Royal Modern Medical Center undergoing spiral CT scan 16 slices (in the period September 2017-December 2017). The average age of the samples was (44) years.

المخلص

الاشعة المقطعية هي تقنية تصوير طبية تشخيصية , عند استخدامها تعطي جرعة اشعاعية عالية للمريض مقارنة مع تقنيات التصوير الاشعاعية الاخرى , وبالتالي حساب الجرعة الاشعاعية للمريض مهم جدا في التصوير بالاشعة المقطعية , التي تمتاز بدقة تشخيصية عالية . تعتبر زيادة استخدام الاشعة المقطعية في السودان في السنوات الاخيرة من الاسباب التي حفزت الباحثين لخفض الجرعة الاشعاعية والخطر الاشعاعي المصاحب لها .

لذلك هدفت هذه الدراسة إلى قياس الجرعة الاشعاعية الناجمة عن فحوصات الاشعة المقطعية للاجهزة ذات الستة عشر شريحة . تم فحص 30 مريضا(ناضجين ,كور و اناث) بالمركز الطبي الحديث في الفترة من سبتمبر و حتي ديسمبر 2017 . بلغ متوسط العمر للمرضي 44 سنة .

## Table of Contents

Topic	Page Number
Dedication	I
Acknowledgement	II
English Abstract	III
Arabic Abstract	iv
Table of contents	V
List of figures	VI
List of tables	VII
List of abbreviation	VIII

## CHAPTER ONE

1.1 Introduction	1
1.2 Problem of the study	2
1.3 Objective of the study	3
1.3.1 General objective	3
1.3.2 Specific objective	3
1.4 Material and Methods	3

## CHAPTER TWO

2.1 Radiation	4
2.1.1 Photon	4
2.1.2 Common features of electro-magnetic radiation	4
2.2 X-Ray	5
2.3 Production of x-ray	5
2.3.1 Bremsstrahlung spectrum	9
2.3.2 Characteristic x-ray spectrum	10
2.4 X-Ray interaction with matter	11
2.4.1 Compton scattering	11
2.4.2 Photoelectric effect	12
2.4.3 Beam attenuation	13
2.5 Computed Tomography	14
2.5.1 Principles of operation	14
2.5.2 Mutislice helical computed tomography imaging principles	17
2.5.3 Hounsfield unit	17
2.5.4 Filtration	18

2.5.5 Detectors	19
2.5.6 Operating Console	19
2.5.7 Computer	20
2.5.8 Gantry	21
2.5.9 Computed Tomography Quality Control	21
2.6 Radiation Hazards from CT	21
2.7 General Thoracic Scanning Methods	24
2.8 CT Dose Description	25
2.8.1 CT Dose Index	26
2.8.2 Dose Length Product	26
2.8.3 Effective Dose	27
2.8.4 Dose Display	29
2.8.5 Dose Reduction and Optimization in CT of The Chest	29
2.9 Routine Chest	30
2.10 Previous Studies	32

### CHAPTER THREE

3.1 Material	34
3.1.1 Patient Data	34
3.1.2 CT Equipment Specific Information	34
3.1.3 CT Scan Parameters	34
3.2 Method	34
3.2.1 Dosimetric Calculations	34
3.2.2 Monte Carlo Dose Computation	35

### CHAPTER FOUR

4.1 Result	36
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### CHAPTER FIVE

5.1 Discussion	39
5.2 Conclusion	40
5.3 Recommendations	41
REFERENCES	42
APPENDEX	44

## List of Figures

Figure 2-1 x-ray production	6
Figure 2-2 Bremsstrahlung radiation	7
Figure 2-3 Generation of a characteristic x-ray in a target atom	10
Figure 2-4 The filtered spectrum of bremsstrahlung and characteristic radiation	11
Figure 2-5 The diagram shows Compton scattering	12
Figure 2-6 Photoelectric absorption	13
Fig (4.1) : The relationship between Age and Entrance dose	37
Fig (4.2) : The relationship between Age and Dose Length Product	38
Fig (4.3) : The relationship between Age and CTDIvol .	38

## LIST OF ABBREVIATION

CT	Computed Tomography
ALARA	AS Low as Reasonably A achievable
mSv	mille Sievert
mGy	mille Gray
CTDI	computed tomography Dose Index
DLP	Dose Length Product
MUSCT	Multi slice Computed Tomography
ED	Entrance Dose