قال تعالي :

(قل لو كان البحر مدادًا لكلمات ربي

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Dedication

To those of the fingers to give us a

moment of happiness

To reap the thorns out of my way for me to

pave

the way science

To heart the great my father

Of whom breastfed of love and healing

balm

To the heart as pure whiteness my parents

To my friends , and to all my family

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In the Name of Allah, the most Beneficent, the most Merciful

First Praise is to Allah, and peace and blessings upon the noblest Messengers, and his Prophet Muhammad and on his family and all his companions. I would also like to thank **Department of Nuclear Medicine in Royal Care International hospital and Nielin Medical Diagnostic Center** , and all of my

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Abstract

The main objective of this study was to assess radioactive waste management in nuclear medicine departments in Khartoum state hospitals

The study was done in two nuclear medicine departments Royal Care International Hospital(RCIH) (using two types of radionuclide TC99m and I131) and Alnilein Medical Diagnostic Centre(NMDC) (using two types of radionuclide TC99m) , during the period from (January-2016 up to september-2016).

Data was collected using Analog Radiation Detector at (RCIH) &Halogen-quenched GM tube at (NMDC)

The results of this study revealed that discharge of the radioactive waste to the environment was done after 10thhalf life's of radioactive materials, in both hospital the radioactive waste collected in one bag regardless of type of radioactive waste (gloves, syringe, vials …etc) so TC99m discharge for the environment was done after four days in two departments , and for I131the discharge after Three months .

It concluded that the waste management in nuclear medicine departments not use optimum way in nuclear medicine departments in Khartoum state hospitals and it must be consider that the Radioactive materials potentially hazardous if they are not controlled

ملخص البحث

إدارة النفايات المشعة تلعب دورا هاما في قسم الطب النووي، والهدف من إدارة النفايات المشعة هو التعامل مع النفايات المشعة بطريقة تحمي صحة الإنسان والبيئة في الحاضر والمستقبل، دون فرض أعباء لا مبرر لها على الأجيال القادمة .

والهدف من هذه الدراسة لادارة النفايات المشعة وتوضيح كيفية التعامل معها لحماية صحة الانسان والبئية للان و المستقبل.

وقد تمت الدراسة في مستشفي رويال كير قسم الطب النووي و مركز النيلين للتشخيص الطبي قسم الطب النووي باستحدام نوعين من النويدات المشعه نظير اليود 131 و نظير التكنشيوم 99 .

واظهرت النتائج المتحصل عليها من مستشفي رويال كير و مركز النيلين ان النفايات المشعه يتم جمعها والتخلص منها ككل دون اجراء عملية فرز لكل نوع من النفايات علي حدة .

كما يتم تصريف النفايات لنظير التكنشيوم 99 بعد اربعة ايام من تاريخ تخزينها في كلا من مستشفي رويال كير و مركز النيلين ، وتصريف نظير اليود 131 بعد ثلاثة شهور من تاريخ تخزينها في مستشفي رويال كير العالمي .

Contents

Items	Page NO.
الايه	I
Dedication	II
Acknowledgements	III
Abstract (English)	IV
Abstract (العربية)	V
Contents	VI
List of tables	IX
List of figures	X
List of abbreviation	XI
Chapter one : Introduction	
1.1 Introduction	1
1.2 Radioactive waste	2
1.3 Sources of Radioactive Waste	3
1.4 handling of Radioactive Waste	3
1.5 Problem of study	4
1.6 Objectives of the Study	4
Chapter two :literature review	

2.1 Decay of Radionuclides	5
2.1.1 Spontaneous Fission	5
2.1.2 Alpha (a) Decay	6
2.1.3 Beta (β) Decay	6
2.1.4 respectively	7
2.2 Quantities and units	8
2.3 Basic Principles of Radiation Protection	10
2.4 Type of Radioactive Waste	11
2.4.1 General	11
2.4.2 Liquid waste	12
2.4.3 Gaseous waste	13
2.4.4 Solid waste	13
2.4.5 Spent sealed sources	13
2.4.6 Decommissioning waste	14
2.5 Assessment and Optimization and of Radioactive Waste	15
2.6 Segregation and Packaging of Radioactive Waste	18
2.6.1 Waste prevention and minimization	19
2.6.2 Dilution	21
2.7 Principles for collection and segregation of waste	22
2.7.1 Liquid wastes	23
2.7.2 Solid wastes	24
2.8 Discharge of waste below the clearance level to environment	26
2.8.1 Clearance level	26
Previous Study	30
Chapter three : Material and Method	
3.1 Material Used	37
3.1.1 Monitor 4	37
3.1.2. FHT 111 CONTAMAT	38
3-2 Type of study	39
3-3 Place and time of study	39
3-4 Data collection	40
Chapter four : Results	
4.1 Results	41
4.1.1: Radioactive Waste measurements	41
Chapter five : Discussion and Conclusion and Recommendation	
5.1 Discussion	47
5.2 Conclusion	49
5.3 Recommendation	50
5.4 References	51

List of tables

Table	Item	Page NO.
4.1	Radionuclide and Activity information at Alnilein Medical Diagnostic Centre – Nuclear Medicine Department	41
4.2	Radionuclide and Activity information at Royal Care Hospital – Nuclear Medicine Department	42
4.3	Radionuclide and Activity information at Royal Care Hospital – Nuclear Medicine Department	43

List of figures

Figure	Item	Page NO.
2.1	Decay of 131I	7
2.2	Decay of 99MO	8
2.3	prescribes processes which may be required to ensure that waste can be disposed of safely	12
2.4	Mangement of radioactive waste	15
3.1	& Monitor 4 / Analog Radiation Detector - a ß y x , at Nuclear Medicine department Royal Care	37

3.2	Thermo Scientific TM FHT 111 CONTAMAT contamination	39
4.1	Monitor at Nuclear Medicine department Alnilein Centre show radioactive waste radionuclide and dose information at Royal	44
4.2	Care hospital radioactive waste radionuclide and dose information at Royal Care	44
4.3	hospital radioactive waste radionuclide and dose information at Royal Care	45
4.4	hospital radioactive waste radionuclide and dose information at Royal Care	45
4.5	hospital radioactive waste radionuclide and dose information at Alnilein	46
4.6	Medical Diagnostic center show radioactive waste radionuclide and dose information at	46
	Alnilein Medical Diagnostic centre	

Abbreviation

IAEA	International Atomic Energy Agency.
ICRU	International Commission on Radiological Units and Measurements
ESTRO	European Society for Therapeutic Radiology and Oncology.
QA	Quality Assurance.
QC	Quality Control.
NCR	National Cancer Registry.
Gy	Gray
MV	Mega Volt.
NH&MRC	National Health and Medical Research Council
MRI	Magnetic Resonance Imaging.
CT	Computed Tomography.

RIA	Radioimmune analysis
MEMR	Ministry of Energy and Mineral Resources
GTRI	Global Threat Reduction Initiative
OSRP	OffSite Source Recovery Project
EU	European Union
TC	Technetium
Kev	Kilo electron volt
FDG	Flurodeoxy Glucose
PET	Positron emition Tomography
SPECT	Single Photon Eemtion Computed Tomography
RPO	Radiation Protection Officer
EC	Electron Capture
IT	Isomeric Transition
Bq	Becqurel
SV	Seivert
Man-SV	Man-Sievert