

Dedication

It's my pleasure to dedicate this thesis to the cornerstones in my professional life; they left an unforgettable fingerprint, my teachers, leaders, and scientist.

Sure in my personal life to my Parents, my brother, my sisters and special dedication to the soul of my beloved Grandfather and Aunt who's their encouragement & motivation was the real motive behind my success.

To all my family members whom I could never have achieved this without their unlimited support.

To my friends and my colleagues.

Acknowledgement

First of all I thank "Allah".

I would like to express my deep thanks to my supervisor, Dr. Caroline Edward Ayad For her grateful help, guidance support, and encouragement , also I would like to thank my friend Nosiba Yousif Ahmed for her help and support and lastly thanks to everyone who was helped me to do this research.

Abstract

This study was done to evaluate the National safety form in MRI centers as well as to compare the national safety form with the international one.

The study was done at Khartoum Advancing Diagnostic Center (KADC), Elrabat University Hospital and National Cancer Institute (NCI) in Wed Medani, in the period from January 2011 to June 2011.

The sample of the study was 50 patients from both gender and with different ages and examinations. All patients were asked to fill and answer the international ideal safety form before their examination, this to ensure the application of the safety procedures. The national MRI forms were compared with the national one; so as to be able to evaluate what was applied in MRI departments in Sudan.

The data was analyzed by using statistical package for Social Studies (SPSS), 32% had prior surgery, 6% had eye involving metallic object, 20% were injured by foreign body, 20% were suspected to be pregnant 14% had infusion pump, 4% had implanted drug infusion devise, 2% had prosthesis, 8% had prosthesis limb, 14% had external and internal metallic objects as well as 36% of the sample with hearing aid and were examined by MRI.

6% had cardiac pacemaker, 6% had cochlear implant and implanted hearing aid 2% had metallic fragments and foreign body and were not examined by MRI.

The study concluded that this application was not filling full by the international safety procedures guide lines.

الخلاصة

أجريت هذه الدراسة لتقييم استمارة السلامة في مراكز التصوير بالرنين المغناطيسي في السودان وكذلك مقارنتها باستمارة السلامة العالمية.

وقد تمت هذه الدراسة في مركز الخرطوم التشخيصي المطور ، مستشفى الرباط الجامعي و المعهد القومي للسرطان ، في الفترة من 20 يناير 2011 إلى 20 يونيو 2011 .

وشملت العينة (50) مريضاً من كلا الجنسين ومختلف الأعمار و مختلف الفحوصات . وقد طلب من جميع المرضى ملء والإجابة على إستمارة الامان الدولية قبل اجراء الفحص ، وهذا لضمان تطبيق إجراءات السلامة. الإستمارات المحلية في مراكز التصوير بالرنين المغناطيسي تمت مقارنتها مع الاستمارات الدولية ، حتى يتم تقييم ما تم تطبيقه في وحدات التصوير بالرنين المغناطيسي في السودان.

تم معالجة البيانات باستخدام الحزمة الإحصائية للدراسات الاجتماعية و اوضحت النتائج ان 32% لديهم عمليات جراحية سابقة، 6% تحتوى اعينهم على شظايا ، 20% لديهم جروح باجسام غريبة، 20% يحتمل وجود حمل، 14% لديهم مضخات سوائل، 2% لديهم اطراف صناعية ، 14% لديهم اجسام معدنية سواء ان كانت داخلية او خارجية وكذلك 36% لديهم سماعات اذن وبالرغم من ذلك تم اجراء فحص التصوير بالرنين المغناطيسي

لديهم جهاز لتنظيم ضربات القلب، 6% لديهم اجريت لهم زراعة شبكية 6% و اداة سمع، 2% لديهم اجسام غريبة تحتوى على بقايا معدنية ولم يتم اجراء الفحص لهم.

اظهرت النتائج ان اجراءات السلامة المحلية لم تطابق ما اوصت به اجراءات السلامة العالمية.

List of abbreviation

MRI	Magnetic Resonance Imaging
SAR	Specific Absorption Rate
SNR	Signal to Noise Ratio
T	Tesla
RF	Radio Frequency
KADC	Khartoum Advancing Diagnostic Center
NCI	National Cancer Institute
U.S	United States

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