

بِسْمِ اللّٰهِ الرَّحْمٰنِ الرَّحِیْمِ

(إِنَّمَا يَخْشَى اللّٰهَ مِنْ عِبَادِهِ الْعُلَمَاءُ إِنَّ اللّٰهَ عَزِيزٌ غَفُورٌ)
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GOD BLESSES THEM ALL.

DEDICATION

**To my family and to my colleagues and
Everybody help me.**

ABSTRACT

Objective: is to apply a technical protocol to reduce CT radiation Dose in trauma cases by decreasing the mA (tube current).

The target reduction is 50%.

Method:

Performing scanning on an adult phantom for trauma protocol Brain. Reference scan (default exposure) 300mA to be registered In exposure log shoot and calculate the dose received in msv. Scan2 reducing mA to200 and registered the dose, evaluate the Image quality.scan 3 reducing mA to100 and registered the dose Received, evaluate the image .phase (2)implemented if phantom Image quality is of acceptable quality .Performing CT trauma with The default exposure parameters and register the dose received . Reference scan can be obtained from previous CT trauma cases. Performing CT trauma with reduction of mA factor to 200mA and Registering the dose received image to be evaluated by the tech- nologist and radiologist. Performing CT trauma with reduction of mA factor to 100mA and register the dose received .Image also to be evaluated by the technologist and radiologist .Applying the rec- ommendations CT technologists and radiologists on the range of Accepted quality and delineate the reduction rate. CT trauma cases with reduced mA can be viewed and the review

The radiologist reports .

Reduction of mA factor in CT parameters will induce reduction in CT dose to the patient and this can be applied to all cases.

Performed scan for 54 cases 28 cases with tube current 200 mA

And 26 cases with tube current 100 mA .The result was found

Clearly the absorbed dose and the effective dose fall down to the Half when used 200mA and more less when we used 100mA as tube current .

ملخص البحث

اهداف البحث : اهدف البحث ايجاد طريقه تعتمد على تخفيض جرعه الاشعه لمرضى الطوارئ بتقليل

تيار انبوب الاشعه المقطعيه.

هدفنا ان يصل انخفاض جرعه الاشعه 50%.

جرى هذا البحث. الامارات العربيه المتحده في مستشفى مدينه زايد. قسم الاشعه في الفتره من يوليو 2015 الى يناير 2016.

اولا: اجريت الاشعه المقطعيه على (الدميه) الفانتوم بتيار 200 مل امبير وسجلت جرعه الاشعه و ثم تقييم الصوره بواسطه الفني واختصاصي الاشعه.

ثم اجريت صوره ثانيه للفانتوم بتيار 100 مل امبير وسجلت جرعه الاشعه و ثم تقييم الصوره. وبعد ذلك اجرى هذا الفحص للمرضى بنفس الطريقه اي بعوامل 200 مل امبير/100 مل امبير

و ثم تسجيل جرعات الاشعه وتقييم الصور بواسطه الفني واختصاصي الاشعه .

لوحظ ان الحالات التي اجريت لها اشعه مقطعيه بتيار منخفض يمكن رؤيتها وتشخيصها.

تخفيض تيار انبوب الاشعه يتبعه انخفاض في جرعه الاشعه للمريض.

يمكننا انجاز كل حالات الاشعه المقطعيه بتيار منخفض اي بأقل جرعه من الاشعه.

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List of abbreviation

1. Ct .computed tomography .
2. MDCT: Multi detector computed tomography.
3. MA: mill ampere (current).
4. ALARA: as low as reasonably achievable .
5. IR: iterative reconstruction.
6. ASIR : adaptive statistical iterative reconstruction.
7. CNR: Contrast noise ratio .
8. BSS: basics safety standards.
9. CTDI: ct dose index (MGY) .
10. DLP: Dose length product (MGYcm).
11. K : Constant (for effective dose).
12. DRL: Dose reference level.

