Dedication

To my family
Acknowledgements

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الملخص

يتمثل التصوير الطبي دوراً أساسياً مهم في طرق التشخيص الطبي ولذلك فإنه يقع على عاتق اخصائي وتقنية الاشعه تحديد عوامل التعريض للفحوصات الإشعاعية وذلك لتوفير التوازن بين جودة الصورة وجرعة الاشعاع وحفظ المريض من تعرض لمستويات عالية من الاشعاع.

الهدف الرئيس من الدراسة هو قياس ومقارنة جرعة الاشعاع للمرضى أثناء فحوصات الجهاز البولي بالأشعة المقطعية والتقليدية وتفصيم نوع التقنية المستخدمة.

الجرعة الإشعاعية في فحوصات الأشعة المقطعية قد تم قدرتها بواسطة برنامج الهيئة القومية للوقاية من الاشعاع وبرنامج حساب الجرعات للأشعة المقطعية. وفي الإشعاع التقليدية حسب جرعة الاشعاعية بواسطة برنامج حساب الجرعة.
Abstract

Radiography has a major role of diagnostic method in medical field. Urography provides the radiologist with useful detailed information. However, it is the responsibility of radiologist and technologist to determine scanning technique factor that provide balance between image quality and radiation dose and share in keeping patient radiation exposure at lowest as possible.

The objective of this study are to measure and compare patient radiation dose form computed tomography (CT) and conventional urography and evaluate the protocols used in CTU and IVU imaging procedure.
The radiation dose in CTU estimate by using (NRPB) database and using Impact CT patient dosimetry calculator. In IVU the radiation dose determined by calculated using DoseCal software.

Patients’ radiation dose values for CTU were 172±61.04 mGy/cm (DLP), CTDI\textsubscript{vol} 4.75±1.5 mGy and Effective dose 2.58±0.91 mSv. Cancer probabilities per million were 520.12 for pancreas and 30.96 for testicles. Patients radiation dose values for IVU, the mean ESD 21.62±5.85 mGy Effective dose 1.79±0.48 mSv. Cancer probabilities were 962.95 for uterus and 3.45 for thyroid per million.

Radiation dose can vary considerably between scanners and between institutions. Clinical dose are reported as the dose to standard dosimetry phantom. However, due to large variation in patient size, these doses may not estimate accurately the dose delivered to patient during a particular exam. In this study the radiation dose is considered low compared with previous studies this may be due to the patient size (less than normal), scanner or protocol used. A patient radiation risk for particular exam is proportional to the radiation dose delivered during the exam. This dose will depend on the size of patient, the type of scanner and the imaging protocol used.