



Radiation Dose Associated with Common Computed Tomography Examination.

Ayman Mokhtar^a, Maysa Abd El-Hamid^b, Huda Refaie^c, Tarek El-Diasty^d, Sabry El Mogy^e,

^{a,c,d} Radiology department, nephrology and urology center, Mansoura university Egypt.

^b Physics department, faculty of science, Mansoura university Egypt.

^e Radiology department, faculty of medicine, Mansoura university Egypt.

Abstract

OBJECTIVE: To survey computed tomography (CT) radiation dose associated with non-contrast spiral Multislice computed tomography exam in our institute.

METHODS: Survey radiation dose for non-contrast scan of abdomen and pelvis was retrospectively evaluated in urology nephrology center (UNC) - Mansoura University using a 64-detector CT scanner. Detailed parameters for 362 consecutive examinations, including the patient weight, height, CTD volume ($CTDI_{vol}$), scan length, and dose length product (DLP) were recorded from the dose report. Effective dose (E) was estimated for each patient. The differences between E doses were statistically analyzed using SSPS.

RESULTS: Patients body mass index (BMI) was 13.4 to 51.42 (Average BMI 29.5 kg/m). Patients dose data (1 scan phase for each patient) from dose information: the median value of DLP was 586.45 mGy-cm (83.30 mGy-cm - 1179.70 mGy-cm), median value of $CTDI_{vol}$ was 12.07 (2.20 mGy - 23.9 mGy), median value of mAs used was 186.50 (34mAs - 334mAs). Effective dose range was (1.1 to 16.5mSv) according to international commission of radiological protection (ICRP) 106 and according to ICRP60 the range was (1.3 to 18.93mSv). Maiden value of frequent CT examinations for the same patient was 2 (min 1 scan/year & max 11 scan / year). CT dose variation was highly

significant (p value <0.01) depending on high variation on mAs with (r=0.98). CT dose was moderate depending on MBI (r= 0.55).

CONCLUSION: There was statistically highly significant variation in effective radiation doses associated with non-contrast CT scan of abdomen and pelvis. The reason for this variation must be avoided.

Ayman mokhtar had completed master degree at the age of 35 years from mansoura University,

Presenting author details

Full name: Ayman Mokhtar Said

Contact number: 00201121629339

Twitter account:

Linked In account: Ayman Mokhtar Said

Session name/ number: Dosimetry

Category: Poster presentation