ESTIMATION OF ORGAN DOSES AND RISK OF CANCER ASSOCIATED WITH CT EXAMINATION

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Abstract - The purpose of this study is to estimate the organ doses and risk of cancer associated with common CT examination in Khartoum state A, B and C, the study conducted in three hospitals in Khartoum state – Sudan, in period from April to November 2017, and the data collected from 120 patients, 40 patients from each hospital who undergoing CT brain and abdomen examinations. the data were entered to Expo software for calculate the organ dose and the risk factor associated with CT examinations calculated by x-ray risk website. Results shown the values of effective dose found 9.73 mSv for all patients, for female and male 9.9 mSv, and 9.6 mSv respectively.The effective dose from Brain examinations in three hospitals A, B and C was 16.9 mSv, 3.7 mSv, 3.8 mSv respectively, and from abdomen examinations was 4.2 mSv, 7.6 mSv, 22.2 mSv respectively. Comparing the Effective dose from the hospitals; for CT Brain in hospital A was higher than other hospitals; and for CT Abdomen in hospital C was higher than other hospitals. For organ doses results; the most organs exposed from CT brain was salivary gland, Bone marrow, Bone surface, Eye lens and oral mucosa in hospital A received 97.53, 90.15, 13.96, 34.64, 123.87, 86.46) mSv respectively.The study found that the ability of cancer induced in the female was higher from the male, that can be attributed to body component of the female contain higher percentage of fat than male.

Keywords - MDCT, Effective Dose, Risk of Cancer