ABSTRACT

Machine-generated radiation dose assessment for common computed tomography examination in Komfo Anokye Teaching Hospital, Kumasi, Ghana.

Introduction: Computed tomography plays an essential role in therapeutic decisions, in most cases; early discovery of ailment is possible solely through this imaging technique. In spite of the import role played by x-ray in healthcare, it has the potential of causing cancer. Hence, it is imperative to ensure that radiation is kept as low as reasonably achievable through optimized imaging protocols anchored on routine dosimetry and quality assurance.

Aim: The aim of this study was to assess the radiation dose imparted to patients during common CT examinations with the newly installed 128 slice CT scanner at the Komfo Anokye Teaching Hospital.

Methods: A quantitative-retrospective study design approach was adopted for this study. Data was collected from the CT scan control console, this included patient demographics, volume CT dose index (CTDIvol), dose length product (DLP), pitch and effective dose (ED) and other exposure factors. Data were analyzed using statistical package for social sciences (SPSS) version 20.0.

Results: A total of 380 computed tomography dose data of the head, chest and abdominal region were retrieved from the CT console. Out of this number, males were 221 (58.2%) and females were 159 (41.8%). The mean and the standard deviation (SD) of the ages of the patients were 43.49±20.94 years, ranged (1 – 100) years.

Conclusion: The machine generated CT doses that were recorded for the study were within the ICRP recommended dose reference levels and that of other countries suggesting dose optimization.

Key Words: computed tomography, pediatric, patients, Diagnostic Reference Levels, radiation dose.

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