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Preliminary Diagnostic Reference Levels of Adult CT at Aristide Ledantec National Hospital

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The number of Computed Tomography (CT) procedures performed in Senegal has widely increased as the CT is a powerful tool for the accurate and effective diagnosis. CT is a diagnostic imaging modality giving higher patient dose in comparison with other radiological procedures. The establishing of diagnostic reference levels (DRLs) is a way to optimize the radiation arising from CT procedures to as low as reasonable (ALARA) and to ensure good practice.

OBJECTIF: The purpose of this study is to establish Local Diagnostic Reference Levels (LDRLs) at the University Hospital of Aristide LeDantec for CT examinations and to compare these values with the international Diagnostic Reference Levels (DRLs) to benchmark the local practice.

MATERIALS/METHODS: This was a cross-sectional survey carried out in HALD between August 2014 and January 2015. Demographic data and acquisition parameters of 700 CT scan examinations performed on adult patients were collected from request forms and CT scan consoles. The values of CTDI_w, CTDI_{vol} and DLP were calculated using ImpACT (Imaging Performance and Assessment of Computed Tomography) software for Siemens Definition AS scanner of HALD.

This was done by correlating the measurements from the National Radiological Protection Board (NRPB-R250) scanners with the effective dose calculated, using the CT-EXPO software. Data was analyzed using mean, range, 3rd quartile, as well as mean. Frequency tables and histograms were used to summarize the data.

RESULTS: The 3rd quartile doses in this study for head, chest, abdomen and pelvis were 89 mGy, 12 mGy, 16,5 mGy, and 15 mGy, respectively. These values were in good agreement with the values reported from the literature.

Keywords: Computed Tomography, Diagnostic Reference Levels (DRLs), CTDI_{vol}, DLP

Country or International Organization

Senegal

Primary author: Dr DIAGNE, Magatte (Hospital Aristide LeDantec)

Co-authors: GNING, Fama (Hospital Aristide LeDantec, Senegal); Ms GUEYE, Latifatou (Hospital Aristide LeDantec); Dr DIENG, Mamadou Moustapha (Hospital Aristide LeDantec)

Presenter: GNING, Fama (Hospital Aristide LeDantec, Senegal)

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