

عنوان مقاله:

Dose Assessment in Computed Tomography Examination and Establishment of Local Diagnostic Reference Levels in Mazandaran, Iran

محل انتشار:

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خلاصه مقاله:

Background: Medical X-rays are the largest man-made source of public exposure to ionizing radiation. While the benefits of Computed Tomography (CT) are well known in accurate diagnosis, those benefits are not risk-free. CT is a device with higher patient dose in comparison with other conventional radiation procedures. Objective: This study is aimed at evaluating radiation dose to patients from Computed Tomography (CT) examination in Mazandaran hospitals and defining diagnostic reference level (DRL). Method: Patient-related data on CT protocol for four common CT examinations including brain, sinus, chest and abdomen & pelvic were collected. In each center, Computed Tomography Dose Index (CTDI) measurements were performed using pencil ionization chamber and CT dosimetry phantom according to AAPM report No. 95 for those techniques. Then, Weighted Computed Tomography Dose Index (CTDIW), Volume Computed Tomography Dose Index (CTDIvol) and Dose Length Product (DLP) were calculated.Results: The CTDIW for brain, sinus, chest and abdomen & pelvic ranged (۱۵.۶-۷۳), (۳.۸-۲۵. ۸), (۴.۵-۱۶.۳) and (Y-19.^w), respectively. Values of DLP had a range of (19Y.F-9A1), (F1.A-1AF), (IW1-WFY.W) and (YAW.F-FAF) for brain, sinus, chest and abdomen & pelvic, respectively. The "rd quartile of CTDIW, derived from dose distribution for each examination is the proposed quantity for DRL. The DRLs of brain, sinus, chest and abdomen & pelvic are measured 69.6, IV, Y.A and II mGy, respectively. Conclusion: Results of this study demonstrated large scales of dose for the same examination among different centers. For all examinations, our values were lower than international reference .doses

كلمات كليدى:

Diagnostic Reference Levels, Computed Tomography, Mazandaran, CTDI, DLP

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