

عنوان مقاله:

Detailed CT Dosimetry in ۴ Moroccan Hospitals as a Preparation for the Development of National DRLs

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خلاصه مقاله:

Introduction: Diagnostic reference levels (DRLs) can prevent excessive, unnecessary radiation exposure to patients and reduce the dose variation during different practices. This study aims to establish local DRLs for computed tomography (CT) procedures corresponding to Head, Chest, and Abdomen-Pelvis examinations (single acquisition) in Moroccan hospitals. Material and Methods: A total of ۱۹۱۷ diagnostic CT examinations were included in this study: head, chest, abdomen-pelvis, lumbar, cervical, chest-abdomen-pelvis (CAP), and scanopelvimetry. Firstly, we analyzed the CT dose indicators in terms of the Volume computed tomography dose index (CTDIvol) and the dose length product (DLP) of all the examinations collected. Local diagnostic reference levels were proposed just for the head, thorax, and abdomen-pelvis due to the lack of data for the other examinations. Furthermore, we calculated the effective dose for chest examination using CT-expo software to estimate the effective and organ dose for chest CT. Results: The estimated local DRLs expressed as the ۳rd quartile using CTDIvol were ۴۸ mGy, ۱۴ mGy, and ۱۲ mGy for the head, chest, and abdomen-pelvis, respectively, and ۹۸۶ mGy.cm, ۴۹۶ mGy.cm, and ۶۵۱ mGy.cm for DLP, respectively. Moreover, the proposed average effective dose for chest CT examinations was ۶,۳ mSv. Conclusion: This work establishes local DRLs for CTDIvol and total DLP for head, chest, and abdomen-pelvis procedures and proposes effective doses for chest CT examinations in adult patients. The study shows that the results are conforming to the literature.

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