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EuroSafe 2022 / ESI-15266

Clinical Diagnostic Reference Levels in Computed Tomography examinations

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Authors:

R. Marques, S. I. Rodrigues, A. Abrantes, L. P. V. Ribeiro, K. B. Azevedo, R. P. P. Almeida, B. Vicente

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Methods or background

For the accomplishment of this study, CT dose descriptors such as mAs, kVp, Computed Tomography Dose Index (CTDI) and Dose Length Product (DLP) were registered for CT examinations of the brain, face, chest, spine, abdomen and pelvis, through the examination of the file dose protocol grouped into 12 different clinical indications and using a sample of 20 patients per each clinical indication. A final total of 240 examinations were considered. For the anatomical region of the brain the clinical indications defined were stroke, trauma, and...

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Purpose or learning objective

In the last decades, Computed Tomography (CT) has undergone through significant technological changes that have allowed a circumstantial improvement in quality, acuity, and reliability and, consequently, have revolutionized the diagnosis of many pathologies^{1,2,3}. The increased resource to radiodiagnostic modalities, in which CT largely contributes, has led to an increased patient's exposure to ionizing radiation and, therefore, a greater awareness and focus on patient safety and consequent search for radiographer's practice performance optimization^{1,3}. The BSS Directive point to three major principles concerning patient's dose...

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Conclusion

It was concluded that there was a great variation in the results obtained within the same exam, which leads to the conclusion that the DRLs should be suitable for the clinical indication and not just for an anatomical region.

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Results or findings

The DRLs established for the brain CT examination with clinical indication of trauma, stroke and vascular pathology were 884 mGy.cm; 884 mGy.cm; 1772.50 mGy.cm, respectively for the CT-Face examination (trauma) the DRL obtained was 410 mGy.cm, for the CT-Cervical, Dorsal and Lumbar Spine examinations (trauma) were 410

mGy.cm, 677 mGy.cm, 577.3 mGy.cm, respectively. For the chest examination the DRLs obtained were 383.0 mGy.cm for pulmonary embolism and 490 for neoplasm. For the abdominopelvic CT examinations for urinary tract pathology and colon pathology were 1305,5 mGy.cm...

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References

1. Power, S. P., Moloney, F., Twomey, M., James, K., O'Connor, O. J., & Maher, M. M. (2016). Computed tomography and patient risk: Facts, perceptions and uncertainties. *World Journal of Radiology*, 8(12), 902. <https://doi.org/10.4329/wjr.v8.i12.902> 2. Habib Geryes, B., Hornbeck, A., Jarrige, V., Pierrat, N., Ducou Le Pointe, H., & Dreuil, S. (2019). Patient dose evaluation in computed tomography: A French national study based on clinical indications. *Physica Medica*, 61(March), 18–27. <https://doi.org/10.1016/j.ejmp.2019.04.004> 3. Tsapaki, V., Damilakis, J., Paulo, G., Schegerer, A. A., Repussard, J., Jaschke, W., & Frija, G. (2021). CT diagnostic reference...

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Personal information and conflict of interest

R. Marques: Nothing to disclose S. I. Rodrigues: Nothing to disclose A. F. C. L. Abrantes: Nothing to disclose L. P. V. Ribeiro: Nothing to disclose K. B. Azevedo: Nothing to disclose R. P. P. Almeida: Nothing to disclose B. Vicente: Nothing to disclose

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Anatomical Region	Clinical Indication	Contrast media protocol acquisition
Brain	Stroke	Non contrast enhanced
	Trauma	Non contrast enhanced
	Vascular Pathology	Mask Arterial Phase
Face	Trauma	Non contrast enhanced
Cervical Spine	Trauma	Non contrast enhanced
Dorsal Spine	Trauma	Non contrast enhanced
Lumbar Spine	Trauma	Non contrast enhanced
Chest	Neoplasm	Non contrast enhanced
	Pulmonary Embolism	Non contrast enhanced
	Oligia-CT	Arterial Phase Non contrast enhanced
Abdominopelvic	Urinary Tract Pathology	Coronary phase
		Suprapelvic phase
		Excretory phase

Fig 1: Clinical indications and contrast media protocol acquisition in the CT...

Anatomical Region	Clinical Indication	DRL (mGy.cm)
Brain	Stroke	884,0
	Trauma	884,0
	Vascular Pathology	1772,5
Face	Trauma	438,0
Cervical Spine	Trauma	438,0
Dorsal Spine	Trauma	677,0
Lumbar Spine	Trauma	597,3
Chest	Neoplasm	490,0
	Pulmonary Embolism	383,0
Abdominopelvic	Urinary Tract Pathology	1305,5
	Colon Pathology	783,3

Fig 2: Dose Reference Levels calculated according to the clinical indication considered

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