

Techniques to Optimize the Exposure of Pediatric Patients on Adult Scanners

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Abstract

This report proposes techniques for optimizing the radiation exposure of pediatric patients to adult CT scanners in developing countries. A prospective method was carried out. Most hospitals in this country have older generations of adult CT scanners without a functioning pediatric (software) protocol. A study was done in 2015 and 2018 on 161 pediatric patients to

verify improved practices in the hospitals studied through the proposed strategies. In 2015, the principles of radioprotection were not rigorously respected, but in 2018, the practice improved. The sensitization of medical staff in terms of radioprotection today is visible. Dose parameters decreased in 2015 to 2018 for skull examinations. The activation of the pediatric protocol option in the software used for adult CT scanner in hospitals, the reduction of high tube voltage (kV), the tube current-time product (mAs) and the respect of the immobilization measures proposed in this work according to the ages are factors contributing to the improvement of pediatric examinations in this emerging country. The use of radiological protocols and procedures that are not suitable for pediatric examination delivers great scan lengths resulting in exposure to ionizing radiation of some unnecessary parts in an examination.

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