



Variability in Imaging Practices and Comparative Cumulative Effective Dose for Neuroblastoma and Nephroblastoma Patients at 6 Pediatric Oncology Centers

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Résumé en anglais	<p>The purpose of this study was to estimate the cumulative effective dose (CED) from diagnosis and posttherapy computed tomographic (CT) scans performed on children treated for neuroblastoma or nephroblastoma (Wilms tumor) and to examine the different imaging practices used in 6 regional pediatric oncology centers between January 2010 and December 2013. We analyzed retrospectively the CT scan acquisition data in children aged 10 years or younger at diagnosis. The use of nonionizing imaging modalities was reported. The CT examinations of 129 children, with a mean age at diagnosis of 36 months, treated for 66 neuroblastomas and 63 nephroblastomas, were analyzed. The mean follow-up period was 28 months (minimum, 8 months, maximum, 41 mo). There were 600 CT scans, with a total of 1039 acquisitions. The mean CED from CT scans was 27 mSv (minimum=18.25, maximum=45). Abdominal CT examinations contributed 85% of the total CED. A median of 4.6 CT scans, 10.3 sonograms, and 0.4 magnetic resonance imaging examinations per child were performed. Our results suggest a reduction in radiation exposure but variability in the imaging modality choice and acquisition protocols. We emphasize the need for consensus and standardization in oncologic pediatric imaging procedures. When feasible, we encourage the substitution of nonionizing examinations for CT.</p>

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