

Abstract

Paediatric Head CT Dose at the University Hospital of the West Indies (UHWI): A Retrospective Review

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- Objectives:* To determine the estimated dose (ED) for paediatric (≤ 15 yrs) head CT scans performed at the UHWI and to compare these with international benchmarks.
- Methods:* This retrospective study identified eligible studies from a search of CT log books from April 2010 to May 2013. All scans were performed on one of two CT scanners (GE and Phillips) and data recorded from the DICOM metadata sheet generated for each scan.
- Results:* Seven hundred and twenty (720) eligible subjects were identified. The ratio of male to female subjects was 1.5:1. Infants 0-<1 year represented 15% (n= 108) and the greatest number of subjects was in the 10-15 years group (n=268; 37%). Most studies were non-contrast (97%). Overall, trauma was the commonest indication, accounting for 39% of cases. The commonest non traumatic indication was hydrocephalus, while a fall from height was the most common traumatic indication. Of the studies performed for a traumatic indication, 65.8% were on male patients. CT dose index (CTDIvol), dose-length product (DLP) and mean ED across all paediatric age groups at the UHWI are up to 2.5 higher than international benchmarks.
- Conclusion:* Current practice at the UHWI suggests room for optimization. Increased training to sensitize radiation personnel and referring physicians, establishing dedicated CT paediatric protocols and continued scanner performance audits are recommended as strategies to achieving radiation doses as low as possible.

Keywords: paediatric head CT dose; radiation protection