CT scanning: patterns of use and dose

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Abstract

CT scanning is a relatively high-dose procedure. In spite of the use of magnetic resonance imaging, with faster CT scanners and helical techniques CT is becoming more common. There are few data from practice in the United States regarding the age and sex distribution of patients receiving CT scans, what type of scan and how many scans they receive, or how much radiation dose CT scans contribute.

We reviewed over 33 700 consecutive CT examinations done at our institution in 1998 and 1999. Information on the types of scans as well as the age and sex distribution of the patients was determined.

Between 1990 and 1999, CT examinations in our institution increased from 6.1% to 11.1% of all radiology procedures. Nineteen per cent of all patients seen in our department in the last year had at least one CT scan and more than half had multiple scans on the same day. Thirty-six per cent of all patients had a prior CT examination done on an earlier date. The male/female ratio of patients was 56/44. Studies of children age 0-15 years comprised 11.2% of scans. The highest percentage of scans was done in the 36-50-year-old age group. CT scanning accounted for 67% of the effective dose from diagnostic radiology.

In most large hospitals in the United States CT scanning probably accounts for more than 10% of diagnostic radiology examinations and about two-thirds of the radiation dose. Most patients have multiple scan sequences. Studies done on children are probably more common than previously thought.