Original Paper

Assessment of partial distribution of the equivalent dose in radiology waiting room - Ardabil, Iran (2011)

Zand H (BSc)*[1], Amani M (PhD)[2], Mohammadi V (BSc)[1]
Valinezhad F (BSc) [1], Hosseinzadeh S (BSc)[3]

[1]Radiologist. [2]Assistant Professor, Department of Radiology, Ardabil University of Medical Sciences, Ardabil, Iran.
[3]BSc of Radiology, Department of Radiology, Ardabil University of Medical Sciences, Ardabil, Iran.

Abstract

Background and Objective: The exposures related to the department of radiology can be considered as harmful agent for human. This study was done to assess the partial distribution of the equivalent dose in radiology waiting room in Ardabil, Iran.

Materials and Methods: This descriptive analytical study was done in the radiology department and related waiting rooms of 4 teaching hospital and 3 private radiology sonography centers in Ardabil, Northwest of Iran, during 2011. The variables including type of radiography, the number and condition, staying duration in waiting room were considered for dosimetry. Data were analyzed using SPSS-18 and Chi-Square test.

Results: The lowest radiation dose belong to one specialist radiology sonography center with 0.2±0.002 $\mu S.h^{-1}V$, but for each radiography were determined to be 0.00275±0.004 $\mu S.h^{-1}V$. The highest radiation dose belong to one specialist radiography sonography center with 0.4±0.045 $\mu S.h^{-1}V$ and for each radiography was 0.016±0.0006 $\mu S.h^{-1}V$. Two teaching hospitals accompanied with three privates centers showed to have radiation dose-rate higher than 0.3 $\mu S.h^{-1}V$ ($P<0.05$).

Conclusion: This study showed that the increasing radiation-dose rate (higher than 0.3 $\mu S.h^{-1}V$) in teaching hospitals and private centers can be related to either the unit life or inadepuate of radiological protective shield.

Keywords: Radiography, Equivalent dose, Radiology waiting room, Hospital

*** Corresponding Author: Zand H (BSc), E-mail: hamedzand30@gmail.com**

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