

Original Article

## Diagnostic Reference Level Arising from Dental Panoramic Radiography

Mohammad Taghi Bahreyni Toossi<sup>1\*</sup>, Fateme Akbari<sup>1</sup>

### Abstract

#### Introduction

The present work describes a study in which, based on patient dose measurements, thermoluminescent dosimeters were used to obtain the diagnostic reference level arising from panoramic radiography.

#### Materials and Methods

Ten panoramic units and a sample of 15 patients per X-ray unit were studied. Two thermoluminescent dosimeter chips were placed on the skin surface of selected organs. Mean value of two ESDs was taken as the measured representation dose at the point of interest.

#### Results

Mean ESD on parotid glands derived from panoramic radiography was equal to 369.2  $\mu\text{Gy}$ . Individual patients' dose value varied from 180.1 to 470.3  $\mu\text{Gy}$ .

#### Conclusion

Third quartile of mean absorbed dose distribution arising from a particular examination has been adopted as diagnostic reference level. Based on this definition, local diagnostic reference level arising from panoramic radiography of the greater Khorasan province is equal to 400  $\mu\text{G}$ .

**Keywords:** Diagnostic Reference Level, Iran, Panoramic Radiography, Thermoluminescent Dosimetry

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*1- Medical Physics Department, Medical Physics Research Center, Mashhad University of Medical Sciences, Mashhad, Iran.*

\*Corresponding author: Tel: +98 511 8828576; Fax: +98 511 8002320; Email: bahreynimt@mums.ac.ir