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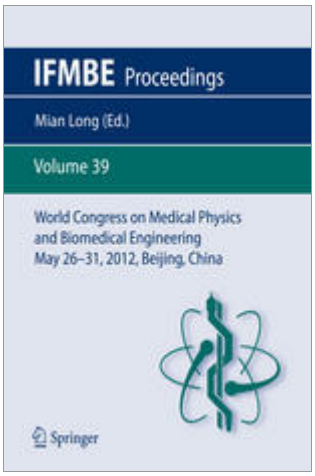
Radiation Risk Assessment in Pediatric Radiographic Examinations of the Paranasal Sinuses

Abstract

The conventional radiography is the investigative method of choice acute sinusitis. Limited data exist in the literature concerning the patient risk from paranasal sinuses radiography. The radiographic technique factors used for this examination of the ‘standard patients’ of the six different ages (newborn, 1, 5, 10, 15 -year-old and adult) were obtained from the departments of radiology of seven public hospitals of Yazd city. The software PCXMC was used in order to simulate projections and calculating the resulting effective doses from these projections. The program also calculated the risk of death for radiation-induced cancers. For the six age groups, mean values of effective doses (E) were found to be 20.34, 22.52, 24.52, 25.96, 31.82 and 39.81 μSv, respectively. For male and female patients, the corresponding risk ranges were found to be 1.14–2.59 and 1.31–3.22 per million, respectively. Results of this study can be used as a guide by physicians to carry out a risk-benefit analysis for the justification of radiographic assessment of paranasal sinuses especially for children before it is requested.



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Authors

- A. Chaparian (1)
- I. Tavakoli (2)
- V. Karimi (2)

Author Affiliations

- 1. Department of Medical Physic, Shahid Sadoughi University of Medical Sciences, Yazd, Iran
- 2. Department of Radiology Technology, Shahid Sadoughi University of Medical Sciences, Yazd, Iran