

عنوان مقاله:

Assessment of whole-body occupational radiation exposures in nuclear medicine practices of Bangladesh during 2010-2014

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نویسندگان:

Mohammad Sohelur Rahman - *Health Physics Division, Atomic Energy Centre, F Kazi Nazrul Islam Avenue, Shahbag, Dhaka, Bangladesh*

Aleya Begum - *Physical Science Division, Bangladesh Atomic Energy Commission, E-12/A, Agargaon, Sher-e-Banglanagar, Dhaka, Bangladesh*

Ashraful Hoque - *Health Physics Division, Atomic Energy Centre, F Kazi Nazrul Islam Avenue, Shahbag, Dhaka, Bangladesh*

Rezaul Karim Khan - *Health Physics Division, Atomic Energy Centre, F Kazi Nazrul Islam Avenue, Shahbag, Dhaka, Bangladesh*

خلاصه مقاله:

Introduction: Occupational exposure to ionizing radiation due to medical activities (both diagnostic and therapeutic procedures) has increased sharply in recent years. Among the occupationally exposed workers in these fields, those most affected by this increased exposure to ionizing radiation are nuclear medicine workers. In this study, annual average effective dose, annual collective effective dose, the individual dose distribution ratio, collective dose distribution ratio, frequency of dose ranges of workers in nuclear medicine departments of Bangladesh during the period 2010-2014 are presented and discussed. **Methods:** Annually about 300 workers of nuclear medicine departments were monitored using thermoluminescent dosimeters (TLDs). The TLDs were readout using Harshaw TLD readers (Model-4500 and Model 6600 plus) for quarterly basis to evaluate the whole-body doses of workers. **Results:** The annual average effective doses of workers are well below the annual average dose limit prescribed by national regulations and international organizations. Majority (95%) of workers received doses less than 1 mSv and only 0.33% workers received doses higher than 10 mSv. The annual average effective dose of workers is three times lower than the worldwide average effective dose quoted by UNSCEAR. However, the annual average effective dose of monitored workers is comparable to dose received by workers in Turkey and France. **Conclusion:** The status and trends in occupational doses show that radiation protection at the majority of the workplace is satisfactory. In spite of that, additional measures are required due to large variations observed in the maximum individual doses over the last 5 years.

کلمات کلیدی:

Nuclear medicine, Ionizing radiation, Occupational exposure, TLD, effective dose

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