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The several issues that it should be paid attention to the radiological workers in the occupational health

Key points
● Radiation workers have certain radiation damage, and the focus is on those engaged in interventional radiology.
● The detection rate of lens opacity was higher among the radiological workers, but 99.7% of the lens opacity occurs in the peripheral cortex of the eye. Posterior subcapsular opacification of posterior pole of the lens less than 3‰ (The national standard of occupational radiation cataract stipulates).This problem should arouse enough attention of occupational health regulatory authorities.
● The chromosome aberration analysis is an important index in occupational health monitoring of radiological workers.

[Abstract]
Background In the present study, we analyzed radiation injuries to Chinese workers exposed to low-dose radiation. We discuss the relationships between dose and injury.
Methods This study randomly selected 976 radiation workers who underwent occupational health monitoring. The radiation workers were divided into 5 different types of work: radiation diagnosis, radiation therapy, interventional therapy, nuclear medicine, and industrial inspection.
Results The average annual cumulative dose to interventional radiation workers was the highest, i.e., 0.86mSv. The detection rate of lens opacity was 37.00%, but 99.70 per cent of lens opacities occurred in the peripheral cortex. Posterior subcapsular opacification was detected less than 1.00% of the time. The rate of chromosomal aberrations was highest for radiological workers with more than 20 years of service. Annual cumulative dose reached 2.04 mSv, and the monitoring dose for 3 months was as high as 1.62 mSv. Dicentric chromosomes were also detected. The manual packaging and drug delivery nuclear medicine staffs totaled 14 individuals. I-131 was detected in the thyroids of 4 workers (28.57%). The detection rate of thyroid iodine-131 was higher in the hand-packed and administered group than in the automatic administration group.
Conclusion Radiation workers exposed to low doses of radiation can sustain injuries. Interventional radiology workers receive the highest doses and sustain the most significant effects. This study suggests that chromosome aberration analysis is an important index in occupational health monitoring of radiological workers. Monitoring of internal radiation exposure cannot be ignored for nuclear medicine staff.

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