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Clinical examination of the eyes functional status and assessment of equivalent dose to eye lens in medical staff performing endovascular interventions under X-ray guidance

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Abstract

Growing use of X-ray guided surgery interventions leads to increase in the risk of radiation side effects in medical staff participating in image-guided interventional procedures. In this connection to protect health and ensure professional longevity of the interventionists are important scientific and social problems. The purpose of the study presented in the article is to assess radiation dose to the lens of eyes, doses to whole body and hands of medical staff performing X-ray-guided endovascular procedures. Doses were measured with the use of thermoluminescent dosimeters. Due to clinical eye examination for above staff to assess abilities to refract the light existence of involution changes, which are unusual for a specific age of an examined person, are found. The study proves that new annual equivalent dose limit for the lens of the eyes of 20 mSv recommended by the IAEA is justified.

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Keywords

Biomicroscopy of eye, Endovascular intervention, Equivalent dose, Lens of the eye, Radiation safety of medical staff, Radiation-associated cataract, Thermoluminescence dosimetry, X-ray image

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