HYGIENIC ASSESSMENT OF THE WORKING CONDITIONS OF MEDICAL PERSONNEL IN THE RADIOLOGY DEPARTMENTS OF HOSPITALS OF TASHKENT (REPUBLIC OF UZBEKISTAN)

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Abstract: *the conducted researches allow to conclude that, situation on working place conditions of category "A" personnel in x-ray rooms in Tashkent can be characterized as successful. At the same time, despite the modernization of the X-ray radiology service, there are still a number of issues, the solution of which will help to reduce the negative impact of working conditions on the body of category "A" personnel. As for ensuring the radiation safety of personnel, we believe that the solution to this problem should begin, first of all, with improving the sanitary literacy of personnel on the biological effects of ionizing radiation.*
Keywords: *treatment and prevention facilities, X-ray department, medical personnel, working conditions, harmful factors, microclimate, illuminating intensity, ionizing radiation.*

ГИГИЕНИЧЕСКАЯ ОЦЕНКА УСЛОВИЙ ТРУДА МЕДИЦИНСКОГО ПЕРСОНАЛА РЕНТГЕНОВСКИХ КАБИНЕТОВ В ЛЕЧЕБНО-ПРОФИЛАКТИЧЕСКИХ УЧРЕЖДЕНИЯХ ТАШКЕНТА (РЕСПУБЛИКА УЗБЕКИСТАН)

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Аннотация: *проведенные исследования позволяют заключить, что в целом ситуация по условиям труда персонала категории «А» в рентгеновских кабинетах г. Ташкента может быть охарактеризована как благополучная. Вместе с тем, несмотря на модернизацию рентгено-радиологической службы, есть еще целый ряд вопросов, решение которых позволит снизить негативное влияние условий труда на организм персонала категории «А». Что касается обеспечения радиационной безопасности персонала, то решение этой проблемы должно начинаться с повышения санитарной грамотности персонала по вопросам биологического действия ионизирующих излучений, в частности, вероятности отделенных стохастических эффектов, принципов и способов защиты от ионизирующего излучения.*
Ключевые слова: *лечебно-профилактические учреждения, рентгеновский кабинет, медицинский персонал, условия труда, вредные факторы, микроклимат, освещенность, ионизирующее излучение.*

The most significant aspects of human activity in which the sources of ionizing radiation are used are nuclear power and medicine, and when number of nuclear power plants is still limited, modern medicine is generally inconceivable without radiation diagnosis and radiation treatment of many diseases [2; p. 576]. Therefore, occupational exposure associated with the use of sources in medicine. Our republic is not an exception. To date, Uzbekistan uses several thousand sources of ionizing radiation, in 90% users are different treatment and prevention establishment, and the category "A" considered mostly irradiated persons [1; p. 26].

An analysis of the date City Sanitary and Epidemiologic Centre indicates that 87% of the sources used in the treatment and prophylactic establishment of Tashkent are represented by X-ray devices for various purposes. Only in recent years 285 units of X-ray machines have been purchased and delivered to the healthcare establishments of the Republic, incl. digital, 28 computer tomographs, 3 single-photon emission tomographs, 29 digital fluorographs, 6 angiocardiographic systems, a linear accelerator and other radiological equipment. Private clinics also equipped with modern radiological technologies.

Studies have shown that the vast majority of new X-ray units are placed in working conditions that fully meet hygiene requirements, whereas many previous existing X-ray rooms required repair, replacement of sanitary equipment, and improvement of ventilation. When assessing working conditions, we took non-radiation and radiation factors. Among the non-radiation factors, the microclimate condition, workplace illumination and anthropogenic indoor air pollution were estimated as an indicator of the quality of their ventilation [3; p. 145].

It was revealed that the microclimate of working place of X-ray rooms in 80% cases corresponds to optimal parameters, but in 20% cases the microclimate parameters can not be called optimal. In the cold period of the year the air temperature is within $20\pm2,1^0$C, relative humidity - 83-85%, the speed of air movement - 0,2-0,3 m/sec. At the same time, on certain days the air temperature was fixed at $16\text{-}18^0$C, which, we indicated that humidity didn`t provide comfortable conditions. In the warm season of the year, the temperature of the air in the rooms of the X-ray rooms was in the range from 27 to 29^0C at a humidity of 53-60% and the speed of movement not more than 0,1 m/sec. When X-ray machines work, the windows of the X-ray rooms should not be open, therefore these parameters of the microclimate, weren`t very rigid, nevertheless complicate heat exchange and worsen ventilation conditions. In particular, concentration of carbon dioxide as an indicator of anthropogenic air pollution in the middle of the working day in X-ray rooms reached 0,24% at an allowable concentration of 0,1%.

The level of total illumination of X-ray rooms is 196±46 lux, which is close to hygienic requirements. However, in few X-ray rooms when placing computer equipment required 300 lux an illumination. Measurement of radiation dose rate at personnel workplaces has shown that the level of X-ray radiation at most points does not exceed, as stipulated in Sanitary rules and Regulation 0194-06 "Hygienic requirements for the design and operation of X-ray rooms, devices and X-ray studies".

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