X-RAY EXAMINATION IN PNEUMONIA WITH THE ASSOCIATION OF COVID 19

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Introduction: Despite the existence of generally accepted diagnostic protocols, when a new coronavirus infection is suspected, in some cases, it is increasingly difficult to detect changes in the lung tissue in a timely manner due to the heavy workload of the main method of radiation diagnostics – computed tomography.

Purpose of the study: to determine the effectiveness of the appointment of an X-ray examination, as well as to conduct a comparative analysis of the use of radiation diagnostics methods – computed tomography and radiography in relation to the diagnostic sensitivity to changes in lung tissue when a person is infected with the SARS-COV-2 virus.

Material and methods: 350 patients (61.0 ± 4.4 years) with confirmed coronavirus infection were examined. Each of the participants underwent X-ray examination and computed tomography of the chest organs.

Results: Out of 350 patients, changes in the lung tissue during chest X-ray were detected in 227 (64.8%), respectively, in 123 (35.2%) people, pathological changes in the lungs were not visualized. When examining patients by computed tomography, changes in the lungs were detected in 343 (95%) patients, radiological changes were not detected in 7 (5%) of the examined patients. When identifying the volume of lung damage, it turned out that the bulk of the subjects – 186 (53.1%) was determined by the degree of CT-2 damage. The degree of CT-1 and CT-3 was determined in 71 (20.2%) and 72 (20.5%) patients, respectively. CT-4 was observed in 16 (4.6%) patients, and in 5% (17 patients) of CT cases, it was not possible to determine pathological changes in the lung tissue, the degree of CT-0 was established.

Discussion: To determine the possibilities of X-ray examination, the results of changes in the lung tissue during the X-ray and CT examination were compared. As a result, chest CT scans revealed characteristic changes for coronavirus infection in 95% of cases. The absence of changes in the lung tissue was observed only in 5%. At the same time, the sensitivity of the X-ray method was only 65%, and in 35% of cases, the X-ray examination of the chest gave a false negative result, which was verified during the subsequent CT scan.It should be borne in mind that the use of CT for screening increases the risk of artificial epidemic foci and promotes the spread of cross-infection, while the use of portable radiography reduces the risk of contamination due to a simplified disinfection process due to the smaller size of the device, as well as the operation of wireless digital detectors.

Conclusion: The coincidence of the results of radiography and CT of the chest in Sars-Cov-2 infection is 65%. In 35% of cases, the X-ray method in the presence of Sars-Cov-2 infection failed to identify pathological changes in the lung tissue, so if CT studies are difficult to access, it is permissible to use chest radiography as a primary study, but if the result of chest radiography is negative, a chest CT is nevertheless necessary. Radiography is advisable as the main method of pre-test diagnostics, but not the only method of radiation diagnostics in the aspects of the diversification strategy.

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