GENERAL CHARACTERISTICS OF CLINICAL MATERIAL AND METHODS OF INVESTIGATION OF PATIENTS WITH PNEUMONIA COVID19

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ABSTRACT

The main target of SARS CoV-2 is the lungs. In pathogenesis, 2 mechanisms should be distinguished that mutually burden each other and can lead to the development of ARDS (pathomorphologically diffuse alveolar damage): direct viral damage to alveocytes with the development of immuno-inflammatory syndrome; the development of micro- and macrothrombosis of pulmonary vessels and obstructive thrombo-inflammatory syndrome. Therefore, the disease was named microCLOTS – microCOVID Lung Obstructive Trombovascular Syndrome1. As in the whole world, the incidence of COVID 19 pneumonia in the Republic of Uzbekistan is more than 193,000 people, while there is a steady increase.2 The severity and severity of the clinical manifestations of COVID-19 depends on the massiveness of infection (the infecting dose of the virus) on the one hand and the individual characteristics of the macroorganism on the other (age, gender, strength of the immune response, the presence of concomitant diseases-risk factors, etc.). In radiation diagnostics, various variants of changes in the lungs in patients with confirmed coronavirus pneumonia detected using various methods of medical imaging (computed tomography, magnetic resonance imaging, X-ray and ultrasound diagnostics) during primary radiation examination are considered [2.4.6.8.9].

KEYWORDS: *coronavirus infection, saliva lysocin, microbiocenosis of the oral cavity, neurostomatological syndromes, neurological symptoms, pathology of the salivary glands, herpes, stomatitis, pathology of the microflora of the oral cavity, candidiasis (thrush) of the oral cavity, gingivitis, periodontitis, therapy of coronavirus due to the pathology of the oral cavity.*

Relevance. The main target of SARS CoV-2 is the lungs. In pathogenesis, 2 mechanisms should be distinguished that mutually burden each other and can lead to the development of ARDS (pathomorphologically diffuse alveolar damage): direct viral damage to alveocytes with the development of immuno-inflammatory syndrome; the development of micro- and macrothrombosis of pulmonary vessels and obstructive thrombo-inflammatory syndrome. Therefore, the disease was named microCLOTS – microCOVID Lung Obstructive Trombovascular Syndrome1. As in the whole world, the incidence of COVID 19 pneumonia in the Republic of Uzbekistan is more than 193,000 people, while there is a steady increase.2 The severity and severity of the clinical manifestations of COVID-19 depends on the massiveness of infection (the infecting dose of the virus) on the one hand and the individual characteristics of the macroorganism on the other (age, gender, strength of the immune response, the presence of concomitant diseases-risk factors, etc.). In radiation diagnostics, various variants of changes in the lungs in patients with confirmed coronavirus pneumonia detected using various methods of medical imaging (computed tomography, magnetic resonance imaging, X-ray and ultrasound diagnostics) during primary radiation examination are considered [2.4.6.8.9].

Computed tomography is generally considered to be the main method of assessing the lesion of the pulmonary parenchyma, but MRI also provides informative data on the presence of changes characteristic

of coronavirus pneumonia, and can be used as an alternative. Magnetic resonance imaging allows you to visualize signs of possible development of respiratory distress syndrome, the addition of bacterial infection, and is also informative for identifying the consequences of pneumonia, which is necessary for the appointment of rehabilitation measures.

Standard examination of patients with lung lesions, includes clinical examination, chest X-ray. Chest CT is highly effective in the diagnosis of breast tumors (Zernov D.I., 2010; Serebryakova N.V., 2016; Meladze N.V. 2018; Robert L. with co-author, 2011; Orlando A. et al., 2020).

The importance of radiography is due to the fact that, due to its availability, it is often the primary, and sometimes the only method used to visualize changes in the lungs in case of suspected coronavirus pneumonia. The correct interpretation of radiographs in patients with coronavirus pneumonia is more difficult in comparison with CT and MRI. The main reason for diagnostic errors is the fact that the correct interpretation of changes that may be caused by the COVID-19 associated process largely depends on the qualifications and personal experience of the radiologist, especially when it comes to the early stage of the disease or minimal lung damage. Therefore, if the viral nature of pneumonia is suspected, detected according to X-ray examination, radiography should be supplemented with CT [1.3.5.7.9].

The aim of the study is to study the relationship between the results of chest CT and the clinical manifestations of COVID-19 pneumonia.

Objectives of the study:

to study changes in the lungs associated with coronavirus infection based on radiological criteria

to evaluate the stages and characteristics of the degree of changes in the lungs associated with coronavirus infection based on CT signs

optimize CT and X-ray methods in the presence of COVID 19 pneumonia in cases where the PCR test result is negative.

to determine the indications for the use of CT diagnostics for changes in the lungs associated with coronavirus infection.

The object of the study were 36 patients examined at the Bukhara Infectious Diseases Hospital.

The subject of the study was the results of radiography, and computed tomography, as well as PCR studies in patients with pneumonia associated with coronavirus infection.

Research methods. X-ray, computed tomography, laboratory and statistical methods of research were used in the performance of the work.

Magnetic resonance imaging is an informative and minimally invasive imaging method that does not carry a radiation load on the patient. In the diagnosis of coronavirus infection, MRI can be performed as an alternative method of examination in the absence of the technical possibility of CT, as well as in a contingent whose exposure to radiation exposure is undesirable (pregnant women and children), in cases where there are no absolute contraindications to the use of this method (MR incompatible metal prostheses, artificial pacemakers, etc.)

According to numerous foreign authors, CT pictures of coronavirus pneumonia, the most frequent and characteristic sign is the presence of a "frosted glass" symptom, while the symptoms of "cobblestone pavement", halo, reticular changes and consolidation are manifested in patients depending on the duration and severity of the disease and the presence of an attached bacterial infection (Richard Ha. with co-author, 2015; Kirsi Holli-Helenius. with co-author, 2017; Li Qinmei. et al., 2019; Wei Li. et al., 2019).

The practical significance of the work lies in the fact that the developed CT diagnostic criteria make it possible to increase the effectiveness of the diagnosis of lung lesions in the early stages of coronavirus

pneumonia, and PSR tests -with negative conditions and complications, while contributing to the optimization of treatment methods.

The practical value of the work lies in the fact that the developed diagnostic algorithm improves the effectiveness of the diagnosis of pneumonia and thereby contributed to the optimization of the choice of treatment method, the established imaging CT signs of COVID 19 pneumonia, made it possible to effectively plan the stages of treatment.

CT scan of the chest. Computed tomography of the chest organs was performed on a multispiral computer tomograph "Somatom Perspective" by Siemens. This is a multi-slice spiral computed tomograph with a 64-row detector capable of generating (the number of slices per 360-degree rotation) 128 slices per revolution using a reconstruction algorithm.

The turnaround time of the system is 0.35 s. The study was conducted without holding your breath. We used the following indications for CT:

1. differential diagnosis with other bronchopulmonary diseases, for example, interstitial lung diseases (IZL);

2. delayed clinical recovery and persistence of respiratory symptoms;

When analyzing the images, we determined the change in the transparency of the lung tissue: the presence of emphysematous bloating, hypo- and hyperventilation zones. Along with pulmonary changes, the presence of ribbon-like seals reflecting scarring changes, as well as damage to the pleura: its thickening, compaction and the presence of pleuropulmonary adhesions were determined. Particular attention was paid to the assessment of peribronchial and perivascular changes: deformation of the bronchi and thickening of their walls, the presence of bronchiectasis, signs of bronchiolitis in the form of uneven pneumatization, centrilobular seals, interstitial interstitial infiltration. The following changes in the vascular pattern were revealed: its impoverishment at the periphery and displacement of vessels by bullae, deformation and dilation of vessels, an increase in the ratio of segmental artery /bronchus more than [10.11].

To assess the diagnostic effectiveness of the methods used, sensitivity and specificity indicators were used; for which each individual result was classified as true-positive, false-positive, true-negative and false-negative. Statistical studies were conducted on the basis of standard clinical recommendations. The results of the clinical examination were processed using Microsoft Exell office applications with the calculation of the arithmetic mean of the studied indicator (M), its quadratic error (m), reliability indicators (p) and the Student's criterion. The confidence level $p < 0.05$ was taken as statistically significant changes.

Computed tomograms of the lungs. The patient is 49 years old. The dorsal parts of the lungs are more affected. The PCR test is negative.

It should be borne in mind that CT signs of COVID-19-associated pneumonia may lag behind or outstrip the clinical symptoms of the disease in time of manifestation. According to a number of authors, the pathomorphological substrate of changes in the lungs in the first days of the development of pneumonia against the background of SARS-CoV-2 infection is dilation and stagnation in the capillaries of the alveoli, fluid exudation into the alveolar cavity, swelling of the interlobular interstitium, which is displayed on the MSCT in the form of single or multiple changes in the type of "frosted glass", the mesh seal of the interstitial, drain is characterized by changes and the appearance of foci of high density against the background of "frosted glass".

The diagnostic capabilities of MRI in breast cancer differentiation are significantly increased when using, in addition to anatomical MRI, a functional study with dynamic contrast enhancement, in which breast cancer is more often, in 87.1%, manifested by type III curve, which is characterized by rapid achievement of the maximum of the MR signal after contrast administration, followed by its rapid decrease, less often, in 12.9% type II – plateau after reaching the maximum. In patients with benign tumors of the mammary glands, type I of the curve of a constant increase in the intensity of the signal of formations after administration of a contrast agent was mainly observed [1.5.7.9.11].

The multimodal approach in radiation diagnostics to assess the stages and complicated pneumonia with the association of coronavirus infection provides for the modification of the use of various imaging methods and allows us to formulate the most complete conclusion in the diagnosis of complications of pneumonia.

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