Clinical features and results of treatment of patients with coronavirus infection complicated by interstitial pneumonia, as well as with concurrent diseases in the Fergana Region of the Republic of Uzbekistan

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Abstract. To analyze the clinical features and treatment results, as well as concomitant diseases in patients with coronavirus infection complicated by interstitial pneumonia in the Fergana region of the Republic of Uzbekistan.

1 Introduction

Coronaviruses (CoV) (Latin: Coronaviridae) belong to the family of viruses, according to the may 2020 year case includes 43 species of large, coated, RNA viruses that infect mammals, including humans, birds and amphibians. The name of the virus is associated with its structure, its shoots in the form of a spike resemble the crown of the sun. Now there are 7 known coronaviruses that affect people. The main four types: alfa-coronaviruses, beta-coronaviruses, Delta-coronaviruses and gamma-coronaviruses. They can affect people, many species of animals and, as a rule, cause diseases of the upper or lower respiratory tract and gastrointestinal tract [1-3].

The widespread of coronavirus infection in the form of a pandemic has caused many problems before humanity. Types of coronavirus, which are pathogens for humans, can cause diseases ranging from acute respiratory failure syndrome to severe acute respiratory failure, starting with acute viral respiratory infection (AVRI) disease of the upper respiratory tract (HCoV-229E, HCoV-OC43, HCoV-NL63, HCoV-HKU1 [4-6].

The new SARS-CoV-2 coronavirus, which develops the disease COVID-19, began its development in Uhan, China's Hubei province, in December 2019 with a population of 11 million people [2]. On March 11, 2020, the World Health Organization declared the coronavirus epidemic as a pandemic [3]. According to the data of the World Health Organization in may 2020, the number of patients infected with coronavirus in the world 4,4 million population amounted to 87572 people per day, the number of patients who died

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reached 287000 people. In December, the number of patients worldwide reached 70 998 216, of which 74 664 cases were observed in Uzbekistan [1, 3, 7, 8].

The purpose of the study to analyze the clinical features of the course of the disease in patients with complicated and concomitant diseases of coronavirus infection with interstitial pneumonia in the Fergana region of the Republic of Uzbekistan, as well as the results of treatment.

2 Materials and methods

A retrospective analysis of the clinical course and results of treatment of 6698 patients with coronavirus (interstitial) pneumonia (CP) over 18 years old was carried out. The pharmacological departments of the Fergana branch of the Scientific Center for emergency medical care of the Republic, the regional Endocrinology dispensary, hospital of the Rishton District № 2 of Fergana regionanalyzed the history of the disease of patients older than 18 years who were treated   from May 27, 2020 until February 2, 2021.The total number of patients was 6,698, including 3,416 (51%) of whom received ambulance services, 2009 (30%) of whom received a ticket and 1,273 (19%) of whom applied. 468 (7%) patients were recommended outpatient treatment under the supervision of a general practitioner, as their condition was relatively satisfactory.

6229 (93%) patients were hospitalized for treatment in stationary conditions with different levels of injury of pneumonia after diagnostic testing on clinical protocol. Patients conducted according to internationally recognized treatment standards. In the course of treatment, hormone therapy (glucocorticoids), antiviral drugs, anticoagulants, antiaggregants, antibiotics, diuretics, cardioprotects, hepatoprotects, neuroprotects and symptomatic therapy were used

In the process of treatment, 100% of patients were researched. In all patients admitted to the pharmacological hospital, laboratory tests were carried out to determine the total blood analysis, general urine analysis, biochemical blood test, tests of Express to PZR, IgM and IgG, D-dimer, ferritin, procaltsitonin, Activated partial thromboplastin time, international normalized attitude Prothrombin index, fibrinogen.Patients who came to the hospital, 4245 patients underwent X-ray research (radiography) and 2026 people underwent Multispiral computed tomography.

3 Results and discussion

In 45% of patients, CP was observed in the age range from 50 to 69 years. The first and second blood groups were identified in 68% of patients. According to the results of X-ray and MSCT studies, in 70-80% of cases, bilateral lower-lobe pneumonias, in 20% of cases – medium-segmental and premolar pneumonias and in 10% of cases – diffuse pneumonias were observed. Methylprednisolone (depending on the regimen), used according to a globally recognized standard treatment protocol to prevent the development and progression of pulmonary fibrosis, has shown a beneficial effect. The general condition of 97% of patients improved, after which they were sent for rehabilitation at the place of residence.

Patients with stationary treatment consisted of 3750 men (56%) by gender, and 2947 women (44%).

The distribution of patients by age is shown in Table 1.

Table 1. Age distribution of patients with coronavirus pneumonia (ABS./%).

Age	abs.	%
0-19 age	200	3
20-29 age	536	8
30-39 age	1071	16
40-49 age	1206	18
50-59 age	1474	22
60-69 age	1541	23
70 age and older	670	10

The result of the analysis showed that the highest incidence was observed in 3015 (45%) patients, aged 50-69 years. This is evidenced by the fact that cases with physiologic and pathophysiological changes associated with stuttering in patients of this age, metabolic syndrome, hypercoagulation syndrome play an important role in the origin of the underlying disease.

When analyzing the patients by blood groups: o (I) Rh+ 1607 patients (24%), A (II) Rh+ 2478 patients (37%), B (III) Rh+ 2076 patients (31%) and AB (IV) Rh+ 535 patients (8%). In patients with the second and Third blood group, it was found that the incidence rate was high (68%) (Fig. 1). This condition can be associated with the multiple occurrence of these blood groups humans. But this proportion has not yet been studied.
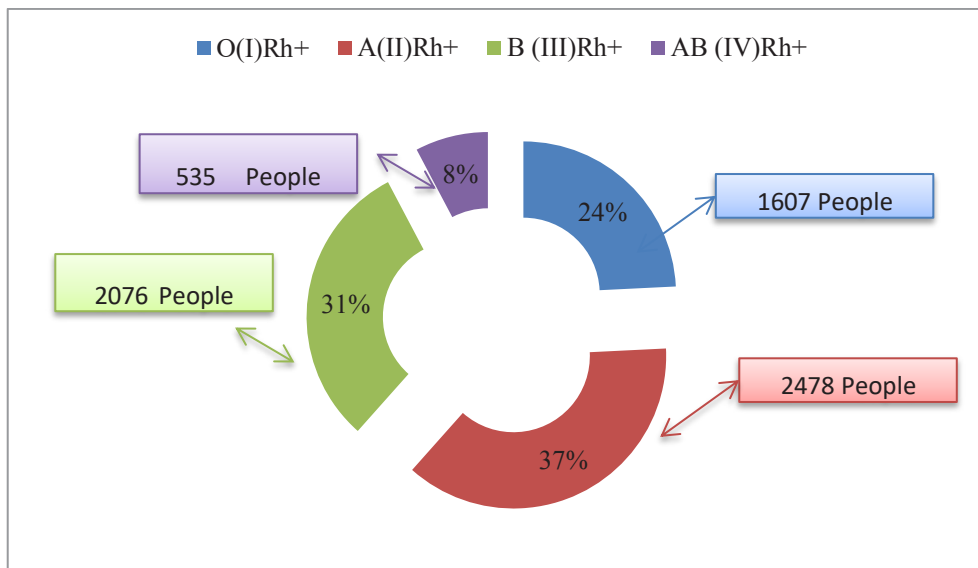

Fig. 1. Blood groups of patients who were ill with Coronavirus disease (abs./%).

In addition to the severe course of coronavirus pneumonia (CP) in patients with concomitant or concomitant diseases (arterial hypertension, diabetes, ischemic heart disease (IHD), obesity, etc.), concomitant diseases are also manifested by the transition to the stage of decompensation. Among those treated, hypertension was observed in 1608 (24%), diabetes in 871 (13%), chronic respiratory diseases in 401 (6%) (chronic obstructive pulmonary disease, bronchial asthma), obesity in 603 (9%), IHD in 201 (3%)and other concomitant diseases in 871 (13%). Concomitant diseases in 2143 (32%) patients were not identified (Fig. 2).
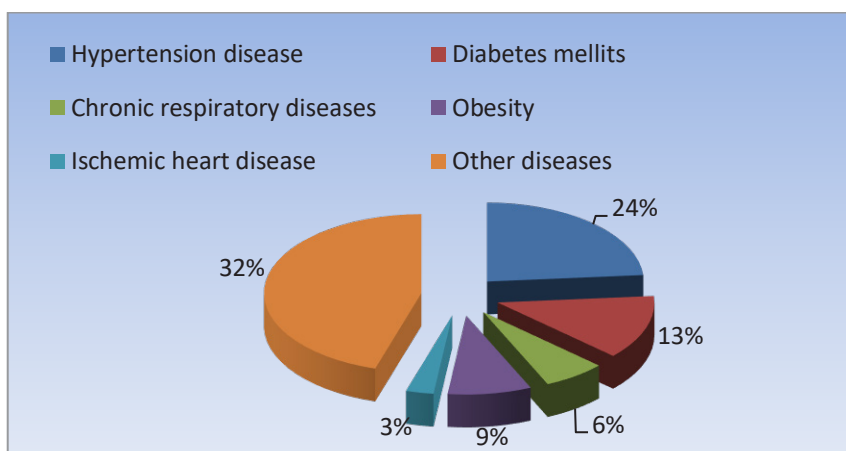
Fig. 2. Frequency (%) of occurrence of concomitant (concomitant) diseases in patients with coronavirus pneumonia.

Patients have addressed such complaints as cough, lack of air, shortness of breath, sweating a lot, general weakness, low appetite or lack of appetite, increased body temperature, lack of taste and smell, diarrhea.

According to the results of X-ray and MCT research, bilateral lower-segment pneumonia was observed in the lungs in 70-80% of cases, middle-segment and basal pneumonia in 20% of cases, and multiple pneumonia in 10% of cases.

After the treatment procedures in the hospital, 6698 patients 6497 (97%) were sent to the place of residence for rehabilitation, improving the general condition.

Mortality was observed in 201 (3%) patients. In these patients, the main causes of death are acquired companion diseases, namely hypertension, diabetes, atherosclerosis, IHD, obesity, chronic respiratory diseases.

4 Conclusion

The use of internationally recognized protocols for the diagnosis and treatment of CP is effective. Illnesses acquired during life, such as hypertension, diabetes mellitus, chronic respiratory diseases, coronary heart disease, are important risk factors for the development and severe course of CP, as well as causes of mortality. To develop new criteria and conduct high-tech studies for early diagnosis and prevention of complications of this formidable disease it is necessary to continue further studies.

Based on the above, the following conclusions were made:

1) according to the results of the analysis, the most frequent cases with corona virus pneumonia (45%) were 50-69 years of age, and the cases associated with physiologic and pathophysiological changes associated with stuttering in patients of this age, metabolic syndrome, hypercoagulationsyndrome are indicative of the fact that they play an important role in the origin of the underlying disease.

2) as a result of the analysis on the blood groups of 6698 patients, the indicator of infection with pneumonia in patients with the first and second blood groups is high (68%), which also indicates the need to pay attention to this factor.

3) in the development and severe course of coronavirus pneumonia, it is recommended that patients with diseases acquired during life, that is, hypertension, diabetes, chronic respiratory diseases, IHD, pneumonia, are considered important risk factors and causes of

death, and patients with this companion disease should be included in the danger group and develop special preventive measures for them

4) according to the results of X-ray and MCT research, bilateral lower-segment pneumonia in the lungs in 70-80% of cases, middle-segment and basal pneumonia in 20% of cases and multiple pneumonia in 10% of cases was observed. These methods are one of the highly informative, sensitive and accurate methods, especially in the diagnosis of MCT research coronavirus pneumonia and help in the early diagnosis of the disease.

5) methylprednisalone (based on the scheme), which was used to prevent the development of fibrosis in the lungs and to stop its exacerbation, was proved to give a positive result in the recognized standard treatment process. The overall condition of 97% of the patients was improved and sent to the place of residence for rehabilitation.

6) when carrying out rehabilitation measures, patients are recommended to eat high-calorie food, regularly engage in breathing exercises, consume enough fluid throughout the day, use blood-diluting (antiaggregant) drugs.

7) research on the development of new criteria for early diagnosis and Prevention of complications of the disease, as well as the conduct of high-tech examinations, should be continued.

References

1. X. A. Rassulova, Sixat-health **7**, 1-3 (2020)

2. C, dev y, Lee X., et al. Huang, Lanset **395(10223)**, 497-506 (2020) (https://www.thelancet.com/ magazine/lancet/article/PIIS0140-6736(20)30183-5 / fulltext)

3. World Health Organization. SOVID-19 of Clinical Management: a temporary manual. 2020 year [internet-Uzbekistan-Uzbekistan]. Shuneq (2020) https://www.who.int/publications-detail/clinical-management-of-covid-19

4. Karanavirus: symptomy i profilactica. https://medikom.ua/ru/koronavirus-simptomy-i-profilaktika/

5. S. A. Milexina et al., Studnet **7**, 509-520 (2020)

6. URL::://tape https.ru/yangiliklar/2020/04/06/nafasolish/

7. A. A. Split, Half Way. Immunology (Geotar-Media, Moscow, 2015)

8. LOR GREAT BRITAIN (2020) https://www.entuk.org/loss-sense-smell-marker-covid-19-infection