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**ANALYSIS OF MANAGEMENT TACTICS FOR PATIENTS WITH CORONAVIRUS
INFECTION (COVID-19) IN TASHKENT CITY**

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ABSTRACT

The COVID-19 pandemic continues to damage health and socioeconomic policies around the world. Differences in lifestyle, living standards, baseline health status of the population provide us with more and more information about the key points of the health care system. Each of the countries, pursuing common goals and objectives for the prevention and treatment of coronavirus infection, shows its experience in combating a new viral infection. Early identification of major risk factors for poor outcomes can save lives and reduce the burden of disease.

Since March 16, quarantine has been imposed in Uzbekistan for all educational institutions, transport links with other countries have been stopped, festivities have been canceled in connection with the celebration of Navruz, and cinemas have stopped working. As of June 23, 2020, 6662 cases of infection were recorded in the country, of which 4560 recoveries and 19 deaths.

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抽象的

COVID-19 大流行继续损害世界各地的健康和社会经济政策。生活方式、生活水平、人口基本健康状况的差异为我们提供了越来越多关于医疗保健系统关键点的信息。每个国家都追求预防和治疗冠状病毒感染的共同目标和目标，展示了抗击新型病毒感染的经验。及早识别导致不良结果的主要风险因素可以挽救生命并减轻疾病负担。

自 3 月 16 日起，乌兹别克斯坦对所有教育机构实施隔离，停止与其他国家的交通联系，取消与庆祝 Navruz 相关的庆祝活动，电影院停止营业。截至 2020 年 6 月 23 日，该国共记录感染病例 6662 例，其中治愈 4560 例，死亡 19 例。

INTRODUCTION

While there was a sharp increase in the number of new cases in the countries of the European region, in Uzbekistan it increased gradually. Although the measures introduced made it possible to avoid a sharp increase in the number of cases at the beginning of the epidemic process, these measures ensured the preservation of a large number of the susceptible population. This led to the fact that against the background of a general decrease in the daily number of new cases in the European Region in Uzbekistan since the beginning of July, after the weakening of quarantine measures, there was a sharp increase in the number of infected, which could lead to a collapse of the health system, as a result, a decision was made to strengthening of quarantine measures. With the introduction of repeated measures, there has been a sharp decline in new cases. After achieving some prosperity and another easing of restrictive measures, since mid-September, Uzbekistan has seen a repeated increase in the number of new cases, but this trend is also observed in the European region and globally. Re-increase is predicted by all prognoses and described in the literature as a "second wave" of morbidity.

Successfully responding to an emerging pandemic means two things: limiting the direct and indirect impact of the pandemic. The

countries that responded most successfully were able to avoid a choice between them: they avoided the trade-off between high mortality and high socio-economic impact of the pandemic. Today, Uzbekistan has managed to reduce the level of infections and the number of deaths within the country.

Statistical data for Uzbekistan as of early December 2020 showed the total number of detected cases, which amounted to 73 431, the number of recovered - 70 712, the number of new cases - 155, in total, 611 people died during the pandemic. In terms of the largest number of people infected with COVID-19 in the context of regions, Tashkent region, Tashkent city, Namangan, Samarkand, Andijan, Bukhara and Kashkadarya regions were dominant.

The epidemiology of coronavirus infection in Uzbekistan has its own characteristics. In view of the anti-epidemic (quarantine) measures taken, the epidemiological curve has a wavy character and differs from that both in the European Region and in the global aspect.

The response measures created in our country made it possible to avoid a high level of mortality at home, prescribing and conducting timely therapy in accordance with the temporary methodological recommendations developed in the republic. The recommendations presented in the document are largely based on materials on

the diagnosis, prevention and treatment of COVID-19 published by specialists from the WHO, the Chinese, American and European Centers for Disease Control, analysis of domestic and foreign scientific publications, regulatory documents of the Government of the Republic of Uzbekistan, Ministry of Health of the Republic of Uzbekistan. According to the Interim Guidelines for the Prevention, Diagnosis, Treatment and Rehabilitation of Coronavirus Infection (COVID-19), Version 8 (09.20.20), qualified medical care was provided to patients.

Since July 5, in Uzbekistan, patients with a mild form of the coronavirus COVID-19, whose disease proceeds without symptoms, were allowed to undergo treatment at home on the basis of a doctor's recommendations, in compliance with sanitary and hygienic rules and the necessary conditions for care. The asymptomatic form of the disease was determined if the patient had a positive test result for the SARS CoV-2 coronavirus, but there were no complaints and clinical symptoms. The early detection of symptoms of the disease was facilitated by the media, which raised the awareness of the population about the disease, i.e. indicated that in most cases with COVID-19 there are: an increase in body temperature (83-99%), cough (59-82%), general weakness (44-70%), loss of appetite (40-84%), shortness of breath (31-40%), muscle pain (11-35%), including other symptoms: sore throat, nasal congestion, headache, diarrhea, nausea and vomiting, and loss of smell or taste has been reported prior to the onset of respiratory symptoms.

The document (Version 8 (09/20/20)) recommends doctors to carry out following **symptomatic treatments** at home for patients with mild COVID-19:

- antipyretics for fever and pain relief (e.g. paracetamol, ibuprofen);
- complex therapy of rhinitis and rhinopharyngitis (moisturizers, decongestants for the nasal cavity);
- complex therapy of bronchitis (mucoactive, bronchodilator and other drugs);
- plentiful warm drink to detoxify, moisturize mucous membranes, facilitate sputum discharge and maintain water balance.

The algorithm for managing patients with COVID-19 has provided the doctor's tactics in detection:

- daily calls from family doctors;
- assessment of the general condition, temperature, clarification of complaints (cough, shortness of breath, weakness, sweating, diarrhea, rash, myalgia (muscle pain)), saturation (determination of the degree of blood oxygen saturation);
- video consultation - if necessary, but at least once every three days.

With an increase in clinical symptoms: increased body temperature, cough, shortness of breath and dyspnea during the observation period, the patient was sent to an infectious diseases hospital according to temporary recommendations.

Patients with a mild form of the disease were removed from medical supervision in the absence of elevated body temperature and regression of respiratory symptoms, as well as after a single negative test result. In a family clinic, a general practitioner fills out a patient card and gives the patient a box with medicines, which contains: Hydroxychloroquine-200 mg, azithromycin 500 mg, preparations of zinc, vitamin D, vitamin C, paracetamol,

acetylsalicylic acid with a detailed indication of the course of treatment, contraindications and side effects of drugs.

Despite the measures taken in the conditions of primary health care, a large number of patients needed inpatient care. To accomplish this task, stationary departments were organized in the centers of Tashkent city. The results of the presented research and the experience of individual health systems and its parts on the example of the Republic of Uzbekistan are published for the first time on clinical material.

The aim is to assess the management tactics and cases of death of patients who were hospitalized with a diagnosis of COVID-19 at the ATLAS distribution center with an assessment of the impact of comorbid conditions on the outcome of the disease.

MATERIALS AND METHODS

We analyzed a database of 4949 patients who were hospitalized at the ATLAS distribution center with a diagnosis of COVID-19, the virus was identified (code U07.1 according to ICD-10).

As a result of the treatment measures taken, 4884 patients were discharged with an improvement in the course of the disease under the supervision of a general practitioner at the place of residence.

Unfortunately, it was not possible to avoid deaths due to the disease in a large flow of patients seeking inpatient care. The number of registered deaths from COVID-19 in the ATLAS distribution center was 65 patients. When analyzing the causes of death of patients, it turned out that 28 patients (43.1%) died in the admission department of the center due to late hospitalization with signs of agonal state and were sent to the pathological center.

It was possible to study the medical history of the remaining 37 patients (56.9%) who died from complications of COVID-19 in the intensive care unit of the ATLAS distribution center in Tashkent.

When analyzing the patient data, it turned out that most of the patients with fatal outcomes were admitted to the ATLAS distribution center by ambulance or by gravity. On admission, most of the complaints of patients who died from COVID-19 were: dyspnea, shortness of breath, chest pain, fear of death, lack of appetite, nausea, vomiting, weakness, dizziness, loss of consciousness, lymphadenopathy, cyanosis, fever. On average, after 7-10 days from the onset of the disease, patients felt a worsening of their condition, were treated at home, and almost everyone noted contact with patients with coronavirus infection at home from close relatives or neighbors.

During the examination in the emergency room of the distribution center, complaints, anamnesis, an objective assessment of the condition, taking a general blood test, measuring the saturation, analyzing the conclusions of laboratory and instrumental studies available in patients on the hands were carried out, and ECG diagnostics were performed. Depending on the data received, i.e. the severity of the patient's condition, patients were immediately sorted into ordinary wards (medical compartments), or the patient was transferred to the intensive care unit, organized in a separate part of the distribution center. Part of the patients, they made up 25%, were transferred to the intensive care unit, being treated in the inpatient part of the distribution center.

The number of the registered patients who underwent treatment in the intensive care unit of the center and died from COVID-19, was:

13 women (35.1%), whose average age was $62.2 \pm \dots$ years; 24 men (64.9%), where their average age is $63.3 \pm \dots$ years old. The average age of patients who died from coronavirus infection was 62.8 years.

According to the data of case histories, the following clinical parameters were recorded in the patients (Table 1).

Table 1

The average values of the objective data of patients admitted to the intensive care unit of the ATLAS center and who were fatal, (n = 37)

symptom	Average value
temperature	36,8
Saturation	47,1
Respiration rate	25,8
Heart rate	97,7
Blood pressure	100,5/59,2
a positive test result for COVID-19	16
a negative test result for COVID-19	21

When studying the causes of death of patients, according to the anamnesis, in most cases, patients self-medicated and noted the ineffectiveness of outpatient treatment. The main reason for this fact was the untimely appeal to the family doctor at the place of residence. Almost all patients had a history of comorbid conditions. On social grounds, the overwhelming number of patients turned out to be pensioners, housewives, temporarily unemployed, and some of them were medical workers. By the time of stay, the patients were treated on average 6.1 days, of which there were patients who were on treatment from

several hours to 1-2 days and up to a maximum of 12-15 days.

The percentage of lung tissue damage according to the findings of MSCT of the lungs at the initial stage of the disease was approximately from 10 to 80% and averaged 48.1%.

Currently, the opinions of scientists and observations of patients with COVID-19 indicate that at least one comorbid condition significantly increases the incidence of adverse outcomes by several percent. It is indicated that among specific conditions, the probability of an unfavorable outcome increases statistically significantly, in particular, in diabetes mellitus, mental disorders, morbid obesity, coronary heart disease, arterial hypertension, acute cerebrovascular accident (including in an anamnesis), acute myocardial infarction (including in an anamnesis), chronic heart failure, arrhythmias, cancer, chronic kidney disease. In addition, tuberculosis, AIDS, trauma / surgical pathology, pregnancy were not connected with more frequent adverse outcomes associated with mortality.

The comorbid conditions of 37 patients that increased the occurrence of death were as follows: Arterial hypertension - 20 (54.1%), coronary heart disease (IHD) - 21 (56.8%), a history of myocardial infarction (PICS) - 2 (5,4%), diabetes mellitus (DM) was found in 16 patients (43.2%), chronic heart failure (CHF) - in 4 patients (10.8%), atrial fibrillation in 1 patient (2.7%), thrombophlebitis - 1 patient (2.7%). Pathology of the gastrointestinal tract and hepatobiliary system (cirrhosis of the liver, chronic cholecystitis) had a history of 4 patients (10.8%). Obesity was detected in 3 patients (8.1%), a tumor was detected in 2 patients (5.4%) in anamnesis.

Analysis of the data of patients with COVID-19 showed that 1 comorbid pathology was detected in 6 patients (16.2%), 2 and 3 comorbid pathologies in 31 patients (83.8%). Most of the patients had a history of ischemic heart disease with hypertension associated with diabetes.

COVID-19 is much more difficult for patients over the age of 65. It is known that elderly and senile patients suffer from cardiovascular diseases much more often. That is why a potentially dangerous combination of a new infectious disease and various cardiovascular pathologies has become an important problem of cardiology in 2020 (Chazova I.E. COVID-19 and cardiovascular diseases / I.E. Chazova, O. Y. Mironova // Therapeutic archive. - 2020. - № 9. - P. 4-7.). The average age of our patients was less than 63 years.

Today, only a limited number of meta-analyses have been published reporting the prevalence of comorbidities with COVID-19 infection ([Borges do Nascimento et al., 2020](#) (Yue Zhou, Qing Yang, Jingwei Chi, Bingzi Dong, Wenshan Lv, Liyan Shen, Yangang Wang, Comorbidities and the risk of severe or fatal outcomes associated with coronavirus disease 2019: A systematic review and meta-analysis, International Journal of Infectious Diseases, Volume 99, 2020, Pages 47-56, <https://doi.org/10.1016/j.ijid.2020.07.029>), [Li et al., 2020c](#) (), [Lippi et al., 2020](#) , [Wang et al., 2020b](#), [Yang et al., 2020b](#)), all of which indicate that hypertension and cardiovascular disease are risk factors for COVID-19 patients progressing to severe illness. However, with limited data comparing the proportions of comorbidities between severe and non-severe cases,

conclusions regarding the association between obesity, diabetes, chronic kidney disease, malignancy, and serious adverse outcomes associated with COVID-19 are inconsistent or lacking.

Однако с ограниченными данными, сравнивающими пропорции сопутствующих заболеваний между тяжелыми и нетяжелыми случаями, выводы относительно связи между ожирением, диабетом, хронической болезнью почек, злокачественными новообразованиями и серьезными неблагоприятными исходами, связанными с COVID-19, непоследовательны или отсутствуют (Yue Zhou, Qing Yang, Jingwei Chi, Bingzi Dong, Wenshan Lv, Liyan Shen, Yangang Wang // Comorbidities and the risk of severe or fatal outcomes associated with coronavirus disease 2019: A systematic review and meta-analysis, International Journal of Infectious Diseases, Volume 99, 2020, Pages 47-56, <https://doi.org/10.1016/j.ijid.2020.07.029>.)

An analysis of complications that led to the death of patients in the intensive care unit of the ATLAS distribution center showed that the patients died as a result of the simultaneous occurrence of:

1. Acute respiratory distress syndrome in 65% of cases (24 patients)
2. Acute cardiopulmonary failure in 56.8% of cases (21 patients)
3. Pulmonary embolism in 41% of cases (15 patients)
4. Pulmonary edema in 19% of cases (7 patients)
5. Acute myocardial infarction, acute disorders of cerebral circulation and disseminated intravascular coagulation - in 5.4% of cases, i.e. 2 patients each.

Summing up brief conclusions about the tactics of managing patients, we can say that the conditions created to combat COVID-19 in the republic allowed:

1. To work out the tactics of on time detection of the patient;
2. Preventive measures made it possible to reduce the spread of infection among the population;
3. Develop patient routing from primary health care to the Zangiota specialized center for COVID-19 patients with an intermediate base in the conditions of distribution centers in the cities of the republic according to the severity of the patient's condition;
4. Almost complete provision of the patients of the distribution center with drugs;
5. There is worldwide evidence that the presence of 2 or 3 comorbid conditions is a great contribution to the development of death from COVID-19.

At the same time, there are several drawbacks in the admission of patients with COVID-19 in a distribution center, in particular,

the inability to quickly conduct many laboratory and instrumental studies adopted by the clinical recommendations; deep analysis of the degree of comorbidity of patients; the presence of medical personnel with different levels of specialization (to solve this the issue, advanced training courses on COVID-19 were held), to carry out their activities in difficult working conditions.

Представленные данные публикуются впервые и все большее значение приобретает частный клинический опыт отдельных лечебных учреждений. В последующих наших научных публикациях будут рассматриваться вопросы клинической эффективности и безопасности препаратов для лечения пациентов с COVID-19.

These presented data are being published for the first time and the private clinical experience of individual medical institutions is getting more and more importance. Our subsequent scientific publications will address the clinical efficacy and safety of drugs for treating patients with COVID-19.