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Some Aspects of Tuberculous Lung Lesions in Covid Patients

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Abstract. A comprehensive analysis of 215 patients with tuberculosis and new coronavirus infection (COVID-19) showed that 40 (18.6%) were referred by anti-tuberculosis institutions, 174 (80.9%) by the general medical network, and one (0.5%) applied for help yourself. Tuberculosis was detected earlier than the COVID-19 attack in 41 (19.1%) cases, specific changes in the lungs were detected simultaneously or later than viral pneumonia in 174 (80.9%).

Keywords: tuberculosis, method, treatment, COVID-19, diagnosis.

Introduction

The SARS-CoV-2 (COVID-19) pandemic attracts the interest of researchers due to its distinctive features: rapid spread throughout the world, severity of the clinical course, high mortality rate, and ability to overwhelm healthcare systems. The initial signs and symptoms of the disease are similar to those of other viral infections (influenza, SARS, Middle East respiratory syndrome) and tuberculosis, but prognosis and complications may differ [2]. Experience in monitoring patients with COVID-19 and concomitant tuberculosis in the world is extremely limited [1].

Materials And Methods

Today it is known that 10–15% of those infected with SARS-CoV-2 require hospitalization, and 20–30% of those hospitalized develop critical or life-threatening conditions. Hospital mortality ranges from 20 to 40% depending on the country or region [3]. According to the University of Freiburg (Germany), the probability of dying within 90 days after the onset of illness caused by COVID-19 was 24% in a cohort of 213 patients. This figure did not exceed 16% if the patient was initially in a regular ward, increased to 47% when he was placed in the intensive care unit, and reached 57% when transferred to artificial ventilation. Age 65 years or more and male gender were predictors of in-hospital death. Until recently, similar studies on COVID-19/tuberculosis co-infection have not been published.

Results And Discussion

During the period from April 20 to September 23, 2022, 215 patients with tuberculosis and persons with latent tuberculosis infection and COVID-19 were subjected to clinical, radiation and laboratory studies. To diagnose tuberculosis, bacteriological, immunological (test with recombinant tuberculosis antigen) and molecular genetic methods, including Xpert MTB/RIF, were used. Everyone underwent multislice computed tomography (MSCT) of the respiratory organs, the results were compared with the latest data before the manifestation of COVID-19.

The median age of the patients was 43 years, and the male/female ratio was 2.5/1.0, no different from that in the cohorts of tuberculosis patients. The share of migrating citizens among the sick dominated and amounted to 60.9%.

Table 1.
Demographic, epidemiological and clinical characteristics of a cohort of 215 patients with tuberculosis and novel coronavirus infection (COVID-19)

	Number of patients

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Index	*abs.*	%
Age	43 (19-91)	
Men	153	71,2
Women	62	28,8
Residents		
Andijan	84	39,1
other regions of Uzbekistan	54	25,1
neighboring countries	41	19,1
foreign countries	4	1,9
homeless person	32	14,9
Employment		
working	39	18,1
idle	139	64,7
pensioners	32	14,9
students	5	2,3
HIV (+)	64	29,8
COVID-19 RNA+	147	68,4
Repeated arrivals	25	11,6
Average bed day in TLO	20,6	
Average bed day in ICU	2,4	
Required transfer to ICU	71	33,0
In-hospital mortality	22	10,2
Mortality in the ICU	21	29,6
Operated	19	8,8

Homeless people and citizens of non-CIS countries accounted for 14.9 and 1.9%, respectively. Almost every third (29.8%) was HIV positive. The diagnosis of “new coronavirus infection caused by COVID-19” was established on the basis of positive nasopharyngeal smears in 147 (68.4%) patients, in the remaining 68 (31.6%) - based on a characteristic clinical and radiological picture. The average duration of treatment in the repurposed department was 3 weeks. Every third patient (71 people - 33.0%) required transfer to the ICU, where he spent approximately two and a half days. Repeated hospitalization due to relapses of SARS-CoV-2 RNA isolation in smears was carried out in 23 (10.7%) cases, three times – in 2 (0.9%).

The majority of the sick (185 people - 86.0%), as well as the deaths (15 people - 68.2%) were of working age from 18 to 60 years (Fig. 1). Persons over 60 years of age accounted for 24.0% of cases and 31.8% of deceased patients.

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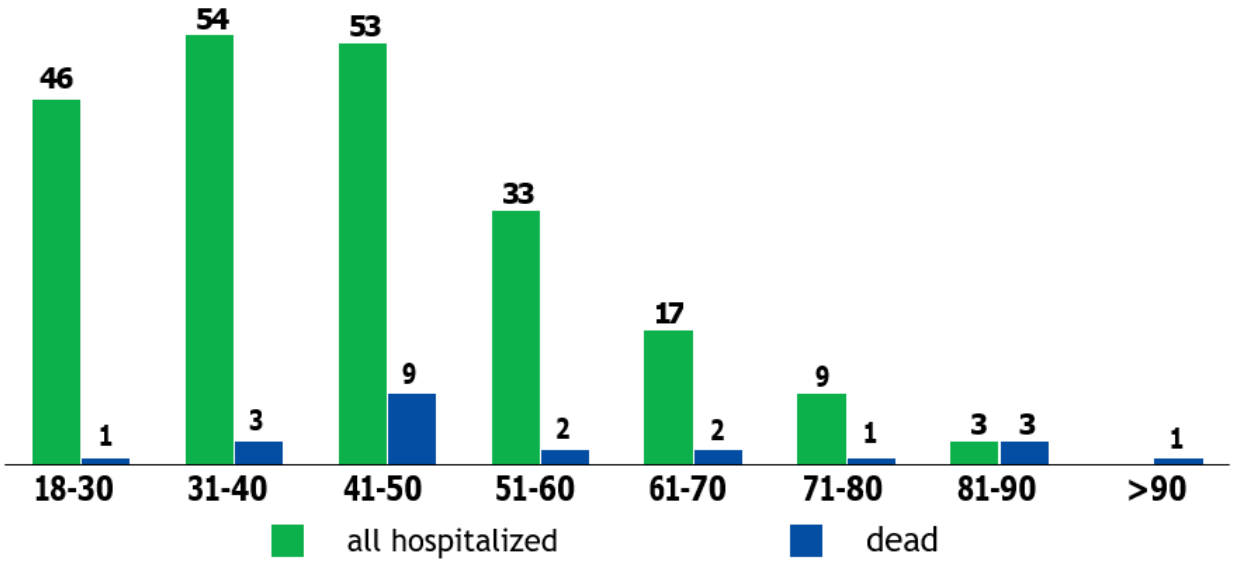

Fig. 1. Distribution of hospitalized and deceased patients with tuberculosis/COVID-19 co-infection by age (abs.)

All the deceased had a significant comorbid background: 22 patients had 61 concomitant diseases (in addition to tuberculosis), i.e. 2.8 per patient.

Active tuberculosis was combined with a new coronavirus infection in the deceased in 20 (90.9%) cases, residual changes after tuberculosis - in 2 (9.1%). Liver diseases (viral hepatitis B and C, toxic lesions) occurred in 13 (59.1%) patients, hypertension (HD) – in 6 (27.3%). 5 (22.7%) cases each included coronary heart disease (CHD) and HIV infection, 4 (18.2%) each - diabetes mellitus and encephalopathy, 2 (9.1%) each - gastritis, colitis, anemia and bacterial pneumonia, 16 (72.7%) – isolated cases of other diseases.

Patient T., 73 years old, had not previously suffered from tuberculosis; at the beginning of June 2022, she noted an increase in body temperature to 37.5 oC, cough, and the appearance of swelling in the right supraclavicular region. On June 14, 2022, she was urgently hospitalized in one of the city hospitals with suspected coronavirus pneumonia, which was not confirmed. On June 14, 2022 and June 18, 2022, surgical interventions were performed for an abscess of the neck on the right (the etiology of the process has not been established).

She was discharged for outpatient treatment with a recommendation to continue taking prednisolone 30 mg per os in the morning, decreasing by 1/2 tablet every 4 days. Hospitalization to a specialized department for lymphadenopathy was recommended (Fig. 1); a lymphoproliferative disease was suspected. The fever persisted to 39.0 °C, and therefore she was admitted to a general hospital on July 28, 2022. A CT scan revealed viral pneumonia. From July 31, 2022, broad-spectrum antibacterial therapy was carried out - levofloxacin, claructam, tacillin, vancomycin, fluconazole; Tocilizumab was administered once on August 14, 2022. She received an infusion of anti-coronavirus fresh frozen plasma and glucocorticosteroids. On August 7, 2022, a positive PCR result was obtained for SARS-CoV-2 RNA. On August 10, 2022, due to the increase in the symptoms of systemic inflammatory response syndrome and respiratory disorders, she was transferred to the ICU of City Clinical Hospital.

Fig. 1. Patient T. multislice computed tomography of the chest organs dated July 28, 2022. Enlarged retrosternal lymph nodes are detected

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Conclusion

Thus, the susceptibility of tuberculosis patients to the new coronavirus infection COVID-19 is most typical in the age group from 18 to 60 years (86.0%), men are more often affected (71.2%). Almost every third case (29.8%) of COVID-19/tuberculosis coinfection occurs in HIV-positive patients. Patients with co-infection COVID-19/tuberculosis require treatment in the ICU in 29.6% of cases, surgical treatment in 8.8%, and tracheostomy in more than a quarter (27.3%) of them.

References

1. Temporary guidelines “Prevention, diagnosis and treatment of the new coronavirus infection COVID-19.” Access mode: http://nasci.ru/?id=25155&download=1
2. Chernyak BA, Trofimenko IN. Drug-induced lung lesions. Consilium Medicum. 11(11):16–21. 2021
3. Kogan EA, Berezovsky YuS, Protsenko DD et al. Pathological anatomy of infection caused by SARS-COV-2. Review. Forensic Medicine. Russian Journal of Forensic Medicine. 2022;6(2):8–30 https://doi.org/10.19048/2411-8729-2020-6-2-8-30.
4. Zabozlaev FG, Kravchenko EV, Gallyamova AR, Letunovsky NN. Pathological anatomy of the lungs in new coronavirus infection (COVID-19). Preliminary analysis of autopsy studies. Clinical practice. 2022;11(2):21–37. doi: https://doi. org/10.17816/clinpract34849