

Administration of Drugs to Treat COVID-19 in Uzbekistan

Akbarov Umid Sanjarovich, MSc; Aripova Tamara Uktamovna, MD; Ismailova Adolat Abdurahimovna, MD; Rakhimjonov A'zam Akbar Ug'li, MSc; Sher Larisa Viktorovna, BSc; Petrova Tatyana Aleksandrovna, PhD; Kasimova Muxlisa Saidakbarhojaevna, MD; Karimova Dildora Sobirjon Qizi, MSc; Rozumbetov Ramazan Joldasbaevich, BSc

Institute of Immunology and Human Genomics, Academy of Science of Republic of Uzbekistan, Tashkent, Uzbekistan

Correspondence:

Rozumbetov Ramazan Joldasbaevich, BSc;

Institute of Immunology and Human Genomics, Academy of Science of Republic of Uzbekistan, Tashkent, Uzbekistan

Tel: +99 8999863604

Email: linebright22@gmail.com

Received: 30 April 2023

Revised: 17 May 2023

Accepted: 22 June 2023

Abstract

The COVID-19 pandemic has become a big challenge for the health systems of all countries. Since there were no reliable data on the efficacy of various drugs for COVID-19 in the early months of the pandemic, medical staff had to rely on constantly changing temporary recommendations and their experience in managing patients with COVID-19. In this regard, it is important to study the actions of medical personnel in a pandemic. In this study, we investigated the administration of drugs to treat COVID-19 in Uzbekistan. We demonstrated that physicians were swiftly adapting to new therapy recommendations; however, some drugs were not used appropriately, e.g., antibiotics and dexamethasone.

Please cite this article as: Sanjarovich AU, Uktamovna AT, Abdurahimovna IA, Akbar Ug'li RA, Viktorovna SL, Aleksandrovna PT, Saidakbarhojaevna KM, Qizi KDS, Joldasbaevich RR. Administration of Drugs to Treat COVID-19 in Uzbekistan. *J Health Sci Surveillance Sys*. 2023;11(Supplement 3):670-672.

Keywords: COVID-19, COVID-19 drug treatment, Retrospective studies

Introduction

In December 2019, China faced an outbreak of a new coronavirus infection, later called COVID-19.¹ On March 11, 2020, WHO announced the pandemic of COVID-19. According to the data provided by World Health Organization (WHO), as of 12 June 2022, more than 533 million cases of COVID-19 were documented globally.² The pandemic has become a big challenge for the entire healthcare system of the Republic of Uzbekistan. Since there were no reliable data on the efficacy of various drugs in treating COVID-19 during the first months of the pandemic, medical staff had to rely on constantly changing temporary recommendations and their own experience in managing patients with COVID-19.³ In this regard, it is important to study the actions of medical personnel in those conditions, specifically treatment tactics, and compare them with WHO recommendations.

Methods

This retrospective, descriptive study was performed by analyzing the case histories of 275 patients (149

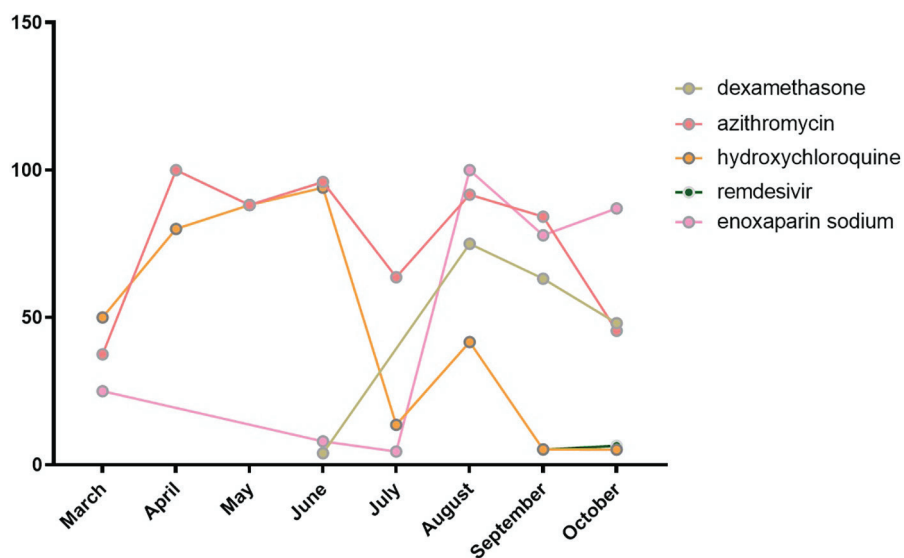
women (54.18%) and 126 men (45.82%)) diagnosed and hospitalized with PCR-confirmed COVID-19 at the clinic of the Research Institute of Virology (Uzbekistan) from 03/15/2020 to 10/28/2020. Data concerning administered treatment e.g., drug name, administration date, and duration were collected. Each patient signed the consent before enrolling in the study. GraphPad Prism 8.0.2 was used for analysis and figures.

Results

The most frequently administered drug in the treatment of COVID-19 was azithromycin. 206 (74.9%) patients received azithromycin (Table 1). Azithromycin was included in the interim recommendations for the treatment of COVID-19 developed by the Ministry of Healthcare of the Republic of Uzbekistan.⁴ So physicians chose azithromycin to treat patients with COVID-19; however it has not demonstrated efficacy in clinical studies at that time.⁵ The second most administered drug in treating COVID-19 was hydroxychloroquine (47.3%). Hydroxychloroquine is an antimalarial drug, a less toxic analog of chloroquine. Figure 1 demonstrates the

Table 1: Commonly used drugs in treating COVID-19 in the hospital of Uzbekistan.

№	Name	Categories	Number of treated patients	%
1	Azithromycin	antibiotics	206	74,9
2	Hydroxychloroquine	antimalarial	130	47,3
3	Enoxaparin sodium	anticoagulant	127	46,2
4	Enteronorm	antidiarrheal	92	33,5
5	Ceftriaxone	antibiotics	88	32
6	Dexamethasone	glucocorticoid	82	29,8
7	Kagocel		78	28,4
8	Acetylsalicylic acid	non steroidal antiinflammatory drugs	73	26,5
9	Verospiron	diuretics	70	25,5
10	Gropivirin	antiviral	68	24,7

**Figure 1:** The percentage of patients who received drugs by month.

frequency of drugs used from March to October 2020. The administration rate of hydroxychloroquine increased from March to June; however, a deep drop was observed in July. Dexamethasone was administered in June, and its rate peaked in August.

Discussion

Early in the pandemic, experimental studies were conducted in which chloroquine and hydroxychloroquine were shown to inhibit the replication of the SARS-CoV-2

virus in vitro. But further clinical studies have not found the effectiveness of chloroquine and hydroxychloroquine in treating COVID-19.⁶ On June 17, WHO, based on the interim results of the Solidarity trial, stopped clinical trials of chloroquine and hydroxychloroquine, and did not recommend them as COVID-19 therapy. On June 5, 2020, the chief investigators of the Randomised Evaluation of COVID-19 thERapY (RECOVERY) Trial published on the inefficacy of chloroquine and hydroxychloroquine in treating COVID-19.⁷ At the same time, hydroxychloroquine was included in the interim clinical guidelines for managing patients with COVID-19 issued by the Ministry of Healthcare of the Republic of Uzbekistan.⁴ Importantly, using hydroxychloroquine has dropped significantly since July (Figure 1). Also, the administration of anticoagulants was widespread, mainly sodium enoxaparin. The administration of anticoagulants was due to the development of microthrombosis in patients with COVID-19. But data from randomized clinical trials have not shown the effectiveness of anticoagulants in treating COVID-19.⁸ Anticoagulants were included in the interim recommendations for treating COVID-19 of the Ministry of Healthcare of the Republic of Uzbekistan.⁴ Since July, dexamethasone, a corticosteroid used to treat many diseases, was actively administered (Figure 1). On June 16, the Randomised Evaluation of COVID-19 Therapy (RECOVERY) trial reported a 30% reduction in mortality of critically ill COVID-19 patients treated with dexamethasone.⁹ Subsequently, the results of a meta-analysis were published, confirming the effectiveness of dexamethasone in patients with COVID-19 who were ventilated or received oxygen therapy. It should be noted that dexamethasone has been actively used since July and was also used in treating patients who were neither ventilated nor received oxygen therapy. Dexamethasone was included in the interim recommendations for the treatment of COVID-19 issued by the Ministry of Healthcare of the Republic of Uzbekistan for treating moderate and severe forms of COVID-19.⁴ It is also worth noting the widespread use of antibiotics in the treatment of COVID-19. One hundred twenty-one patients received an antibiotic in addition to azithromycin during inpatient treatment. At the same time, WHO recommendations and national guidelines do not recommend using antibiotics for the treatment of COVID-19.^{4 10}

Conclusion

Medical staff had to quickly adapt and adjust the treatment when managing patients with a new infection. At the same time, the medical personnel should respond promptly to the latest data on the effectiveness of various drugs considering the fact that the administration of drugs was not always correct, as in the case of dexamethasone, which was also prescribed to patients who did not receive oxygen therapy or were not on ventilation. It is especially worth noting the problem of excessive use of antibiotics

and the importance of further work to combat antibiotic resistance.

Conflict of interest: None declared.

References

- Lai CC, Shih TP, Ko WC, Tang HJ, Hsueh PR. Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and coronavirus disease-2019 (COVID-19): The epidemic and the challenges. *Int J Antimicrob Agents.* 2020 Mar;55(3):105924. doi: 10.1016/j.ijantimicag.2020.105924. PMID: 32081636. PMCID: PMC7127800.
- World Health Organization. COVID-19 Weekly Epidemiological Update Global Overview Update 15 June. (2022).
- Echeverría-Esnal D, Martín-Ontiyuelo C, Navarrete-Rouco ME, De-Antonio Cuscó M, Ferrández O, Horcajada JP, et al. Azithromycin in the treatment of COVID-19: a review. *Expert Rev Anti Infect Ther.* 2021 Feb;19(2):147-163. doi: 10.1080/14787210.2020.1813024. PMID: 32853038.
- Ministry of healthcare of the Republic of Uzbekistan. Practical recommendations for the management of patients infected with COVID-19. 2020.
- Abaleke, E. et al. Azithromycin in patients admitted to hospital with COVID-19 (RECOVERY): a randomised, controlled, open-label, platform trial. *The Lancet* 2021. 397, 605–612. doi: 10.1016/S0140-6736(21)00149-5. PMID: 33545096; PMCID: PMC7884931.
- Liu J, Cao R, Xu M, Wang X, Zhang H, Hu H, et al. Hydroxychloroquine, a less toxic derivative of chloroquine, is effective in inhibiting SARS-CoV-2 infection in vitro. *Cell Discov.* 2020 Mar 18;6:16. doi: 10.1038/s41421-020-0156-0. PMID: 32194981. PMCID: PMC7078228.
- Statement from the Chief Investigators of the Randomised Evaluation of COVID-19 thERapY (RECOVERY) Trial on hydroxychloroquine. No clinical benefit from use of hydroxychloroquine in hospitalised patients with COVID. www.recoverytrial.net. (2020).
- Flumignan RL, Civile VT, Tinôco JDS, Pascoal PI, Areias LL, Matar CF, Tendal B, Trevisani VF, Atallah AN, Nakano LC. Anticoagulants for people hospitalised with COVID-19. *Cochrane Database Syst Rev.* 2022 Mar 4;3(3):CD013739. doi: 10.1002/14651858.CD013739. PMID: 35244208. PMCID: PMC8895460.
- The RECOVERY Collaborative Group. Dexamethasone in Hospitalized Patients with Covid-19. *New England Journal of Medicine* 384, 693–704 (2021). doi:10.1056/NEJMoa2021436.
- World Health Organization. Guideline Clinical management of COVID-19 patients: living guideline, 23 June 2022. <http://apps.who.int/bookorders>. (2021).