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Indicators of clinical and laboratory findings in patients who was suffered from Covid in Uzbekistan. (Retrospective and Prospective Analysis)

Nabiyeva Dildora Abdumalikovna

D.m.s., Professor of the Department of Faculty and Hospital Therapy and Prof. pathology No. 1 of Tashkent Medical Academy, Uzbekistan

Makhfuza Rustamovna Bekchanova

Teacher in Kimyo International University in Tashkent, 156/Shota Rustaveli street, Tashkent, Uzbekistan

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Abstract: A comparative analysis of clinical, anamnestic and laboratory parameters of patients with COVID-19 was carried out using the method of retrospective and prospective examination. It was found that during treatment with antiviral drugs, a quarter of patients had changes of cytolysis markers. It was also shown that patients with comorbidity were more common in a prospective study.

Keywords: Covid-19, retrospective study, prospective analysis, comorbidity.

Introduction: Despite the fact that almost 3 years have passed since the beginning of the Covid-19 pandemic, the whole world is experiencing uncertainty. The current crisis caused by Covid-19 is taking place in unprecedented conditions for society. Freedom of human transit between countries in this globalized world [1 , 2 , 3 , 4], that is, the coronavirus of this environment or each of its new variants, such as Delta or Omicron, causes infection.

Depending on the countries of the world, six waves of Covid-19 can be counted, which left thousands of infected and deceased people as a trace after themselves [7].

And in Uzbekistan, the first confirmed case was detected on March 15, 2020 in a citizen of Uzbekistan who returned from France, and the first case was officially announced [11, 9].

Nevertheless, on April 22, 2020, it was said that 1,692 people were infected with Covid-19 in our country. Based on data from the Worldometers portal, our country has one of the lowest rates in the world in terms of the number of cases detected in a million inhabitants (51) – while the entire world rate was (330), and in terms of the number of deaths from this dangerous infection per million inhabitants (7 people) – 0.2%, and the entire world rate was -22.9% [12].

In early June 2020, an intensive increase in morbidity was reported, with the death toll ranging from 3 to 7 per day, with the maximum number of new cases reported on 4 August (981 patients) [8].

The most common clinical symptom of Covid — 19 is fever, mainly subfebrile (up to 37.5 °C); respiratory

symptoms: cough; in severe cases-symptoms of hangover and intoxication: fatigue and general weakness, headache, dyspepsia and diarrhea. Most common in severe cases-pneumonia and hypoxia [8, 10]. Having studied the above, we considered it permissible to study the history, complaints, clinical-laboratory changes of patients with Covid-19 in Uzbekistan.

METHODS

Our investigation is to study patients with coronovirus in Uzbekistan in 2020 (July-August) and 2021 (July)

using a retrospective and prospective research method.

We have been using the retrospective research method, examined the medical histories of 182 patients who were treated at the Tashkent Medical Academy, and clinical - anamnestic studies of 110 patients at the Republican special Zangiota hospital through the prospective research method. We analyzed the results obtained statistically.

RESULTS AND DISCUSSION

we have taught the average age and gender characteristics of patients who have selected in both research methods. We analyzed the results by comparing them.

Table 1
Age and gender characteristics of patients with Covid-19

Indications	Prospective method		Retrospective method	
	abc	%	abc	%
Male	62	56,36	96	52,7
Female	48	43,64	86	47,3
Average age	43,27	1,42	53,93	0,99
Duration of hospital treatment	12,40	0,41	8,96	0,23

We can see from the table that the gender ratio in the groups is the same, and male predominance was observed.

The average age corresponds to the middle-aged (45-60 years) in the retrospective group, and to the young (25- 44 years) in our prospective group. The day of hospital treatment was longer in patients in the prospective group, 12 days.

We divided the patients in the research groups according to the classification of the World Health Organization by age (Fig. 1)

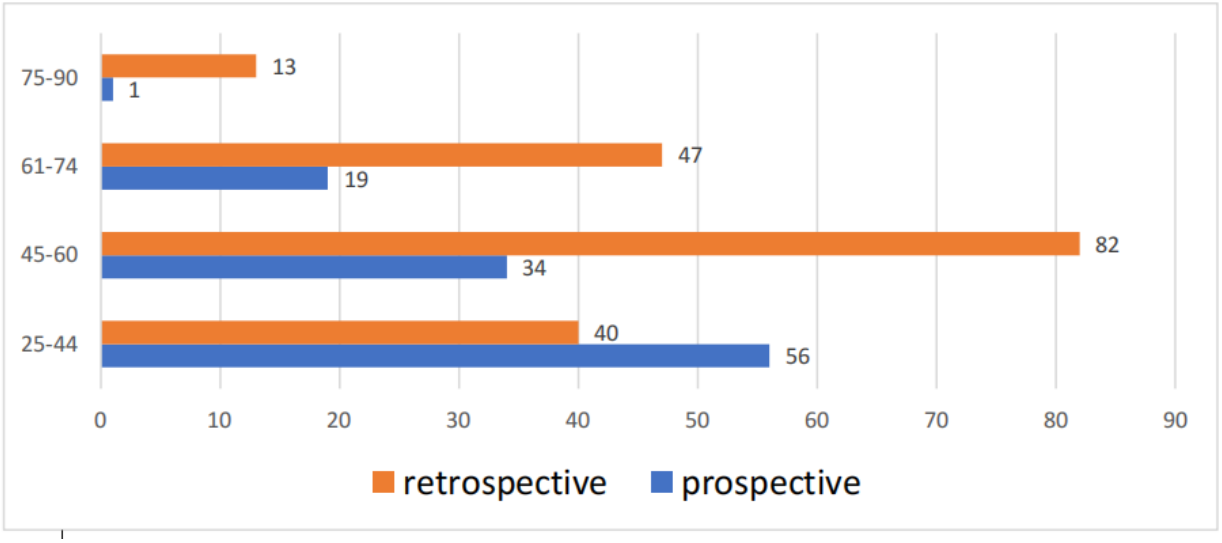
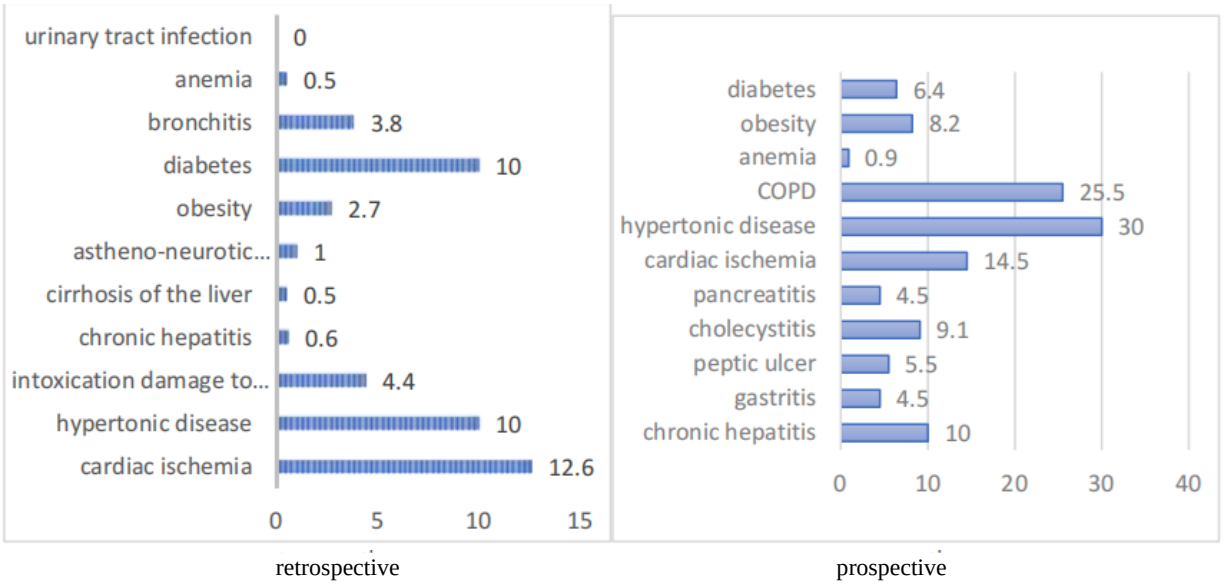


Figure 1. Age distribution of patients in retrospective and prospective study methods.

During the analysis, it became clear that in the retrospective research method, the predominance of middle-aged patients with 82 cases was observed, while in the prospective study, young patients with 56 cases made up a larger percentage. The least damage corresponds to elderly patients of both groups. We studied the comorbid conditions of patients in the study groups (Fig. 2)



retrospective prospective

Figure 2. The occurrence of comorbid conditions in patients in a retrospective and prospective research method.

In the retrospective analysis group, cardiovascular disease and diabetes are more common among patients.

According to World statistics, this is the most common pathology in patients of this age. Patients of the prospective group had a higher incidence of cardiovascular disease and obstructive pulmonary disease, and had a higher incidence of digestive system diseases compared to them. Many diagnoses of this pathology in young patients are associated with improper nutrition. Since our patients were sick in two periods, we analyzed their complaints. only by promising research method, it was possible to observe the dynamics of patients (Fig.3).

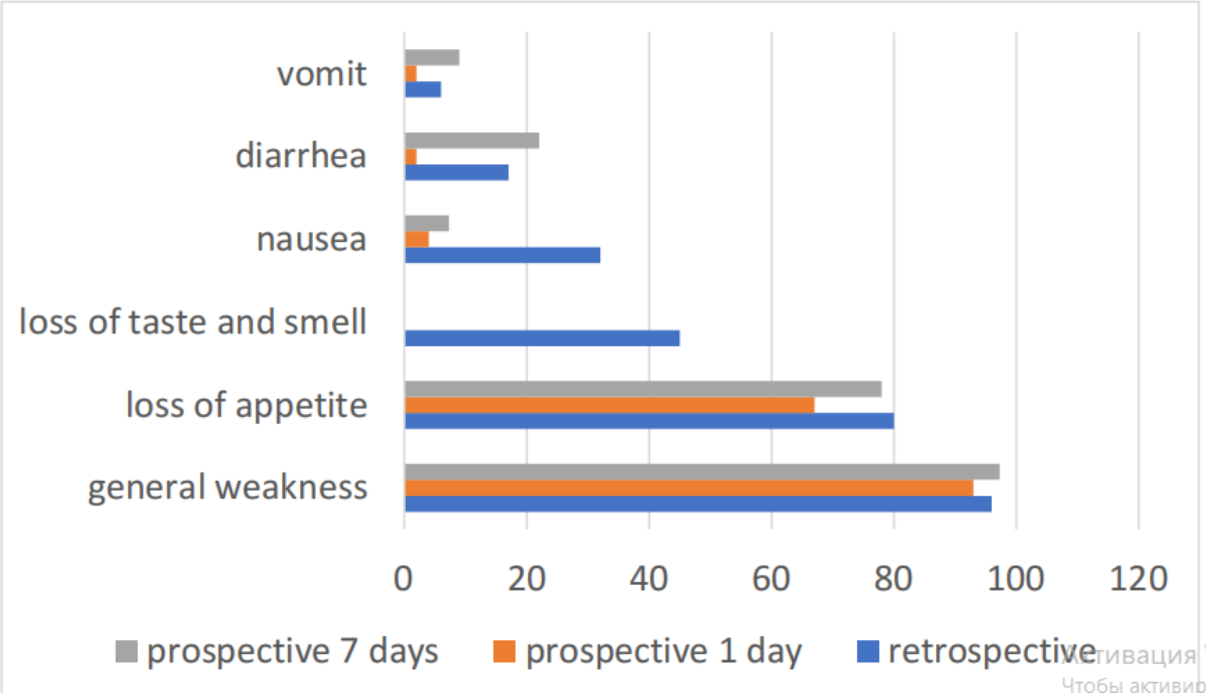
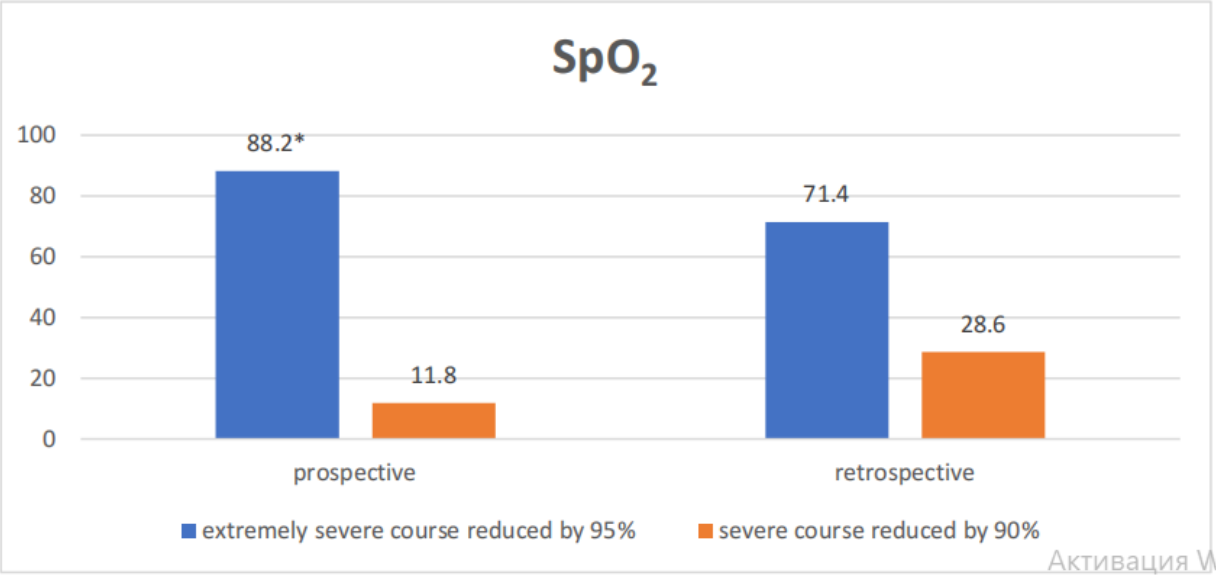


Figure 3. Occurrence of complaints in patients with Covid-19 (prospective and retrospective)

During the study of the main complaints of patients under study, it became known that the most common weakness (93.6%) and decreased appetite (75.5%) were found. Loss of taste and sense of smell was observed in 48.2%. Nausea, on the other hand, was observed in 30.9% of patients, and 7.3% of patients complained of vomiting. Diarrhea-in 9.1% of patients, those in the same ratio said that they suffered from pain in the muscles, by 7 days it can be seen from the diagram that these complaints increased the sensation. When we studied the results of the clinical-anamnestic analysis, we studied the amounts of saturation in the blood of patients. In accordance with it, we received the following results (Figure 4).



(*-88.2% differences are statistically significant P<0.05)

Figure 4. Severity levels of COVID-19, distribution by incidence of SpO2.

From the diagram it turned out that in a large part of the sick, the amount of oxygen in the blood is less than 95%, only 11.8% and in 28.6% it became known to us that it is lower than 90%.

The study studied the results of the general blood analysis of our patients in dynamics (Table 2).

№	Indicators	Reference results	Retrospective	Prospective		
				before treatment	4 days	7 days
1	Hemoglobin	120-160 г/л	165,63±4,02	209,39±3,06	185,63±3,02*	142,91±3,3**^
2	Leukocyte	3-9 10_6 / ul	8,4±1,35	5,57±0,24	8,29±0,35*	10,10±0,52**
3	Platelet	180-320 10_3 / ul	195,37±6,5	221,37±6,25	289,07±10,43*	283,87±7,94**
4	Erythrocyte sedimentation rate	4-10 мм/ч	15,7±1,6	18,37±1,23	16,16±1,25	13,47±1,28*

***- before treatment and 4 days, **- before treatment and 7 days, ^- results compared to 4 days and 7 days are reliable (p <0.05)**

Looking at the table and analyzing it, we observed an increase in ESR in patients in the retrospective study groups. This indicates that the inflammatory process is increasing in the body. The rest of the general blood parameters are normal.

An increase in hemoglobin was observed among patients in the prospective group, which showed an average of 209.39±3.06 g/l, indicating hypoxia or blood clotting.

The average number of leukocytes at the beginning of theexamination was 10.10±0.52 106 / ul, ESR increased by 18.37±1.23 mm/s, which indicates inflammation. The average value of thrombocytes increased dynamically, but within the normal range, this condition indicates blood clotting.

In our patients, it was not possible to study the biochemical analysis of the patients in the retrospective analysis, we only studied the results of the prospective study and saw their changes during the treatment period.

Table 3
Characteristics of biochemical indicators in patients with Covid-19 (n=110).

№	indicators	Reference results	before treatment	4 days	7 days
1	ALT (n=110)	<40 U/l	43,4±3,02	102,78±7,35*	115,98±11,64**
2	AST (n=110)	<35 U/l	37,57±2,62	65,79±4,57*	64,77±7,4**
3	Bilirubin (n=110)	3,4-20,5 mmol/l	9,93±0,4	10,39±0,65*	10,01±0,41**
4	Albumin (n=110)	35-55 g|l	37,02±0,22	35,98±0,32*	35,83±0,29**
5	CPO (n=110)	0-6 mg|l	41,93±4,63	16,74±2,95	7,54±1,01
6	Glucose (n=110)	3,2-6,1 mmol/l	5,34±0,19	5,39±0,25*	4,92±0,09**^
7	Creatinine (n=46)	44-115 mmol/l	92,65±2,45	88±0,93*	100,6±1,41**
8	Urea (n=110)	2,5-8,3 mmol/l	5,95±0,19	6,16±0,19	6,46±0,22
9	Total protein (n=110)	66-85 g|l	75,72±0,36	73,96±0,51*	73,69±0,4**
10	Calcium (n=43)	2-2,6 mmol/l	2,1±0,01	2,14±0,01*	2,14±0,01**
11	Cholesterol (n=17)	<5,2 mmol/l	3,18±0,09	3,31±0,23	2,99±0,08
12	Triglyceride (n=17)	<2,28 mmol/l	2,35±0,07	3,45±0,64	2,18±0,1**
13	Amylase (n=17)	0-220 U/l	137,95±2,83	130,65±1,97	143,9±3,74**
14	GGT (n=17)	9-61 U/l	47,8±3,41	75,8±5,34	79,8±5,18
15	LDH (n=17)	225-450 U/l	245,05±5,65	283,48±4,11*	295,5±5,71**
16	IF (n=13)	38-126 U/l	159,29±6,91	139,65±2,64	152,7±5,73*

***- before treatment and 4 days, **- before treatment and 7 days, ^- results compared to 4 days and 7 days are reliable (p <0.05)**

Table 3, in the blood biochemical analysis, only liver enzymes (ALT, AST) were found to be elevated, and the daily ratio of ALT increased by 267.2% and AST by 172.3%, but bilirubin did not exceed the normal range even though it increased to 100.8%.

Indicators of hepatotoxic damage of the liver increased up to 120% of LDH, Alkaline phosphatase up to 109% within normal limits, GGT up to 166%. This indicator was checked in only 17 people. Perhaps if 110 people were examined, these figures would show different results.

We observed that amylase increased to 104.3%, Urea to 108%, Creatinine to 109% around the norm. The inflammatory marker SRO decreased from 41.93 mg/l to 7.54 mg/l. Lipid parameters increased to a maximum of 111%, Triglyceride increased to 115% and decreased again. Such a situation shows the effectiveness of treatment procedures carried out in patients.

According to foreign scientists [13], hypercoagulation is observed in patients infected with coronavirus, which motivated us to examine the blood coagulation system of our patients (Table 4).

Table 4
Results of coagulogram indicators in patients with Covid-19 (n=110)

№	indicators	Reference result	Before treatment	5 days	7 days
1	Prothrombin time (PTT)	12-15 sec	13,13±0,12	13,18±0,11	13,53±0,15**
2	PTI	70-110%	95,59±1,15	95,71±0,79*	89,62±2,06**^

3	international normalized ratio (INR)	0,8-1,2	1,26±0,23	1,31±0,23	1,07±0,01
4	APTT (activated partial thromboplastin time)	21-35 sec	23,56±0,27	24,11±0,31	23,67±0,34
5	ferritin (n=32)	0,3-0,7	4,19±0,09	3,55±0,1*	7,34±0,78**^

*- before treatment and 4 days, **- before treatment and 7 days, ^- after 4 days and 7 days, the results are reliable (p<0.05).

As can be seen in the table, prothrombin time (PTT), prothrombin index (pti), International normative relations (INR), partial activation of thromboplastin time (APTT) are within the norm limit, but in dynamics there has been a decrease in time relative to time on arrival at the hospital. Balkim is one of the effects of these anticoagulants. As a supplement, a ferritin ratio was tested in 25 patients and an increase occurred, indicating inflammation or liver damage during coronovirus. So, in the results of laboratory analysis of patients with the method of prospective examination, we observed an increase in hemoglobin and platelets, but not out of the norm, and an increase in ESR. In a blood biochemical analysis,we saw an increase in indicators that indicate toxic liver damage (AlT, AST, IF, GGTP and LDH).

CONCLUSION

1. In July-August 2020, middle-aged people were infected with coronavirus more often, and in June 2021 - young people, while the lowest incidence was detected in elderly patients. In two methods of analysis, male proportions prevailed.

2. Among the concomitant pathologies, diseases of the cardiovascular system were in the lead, but in the prospective group, pathologies associated with digestion were more pronounced compared to the retrospective study method.

3. With a prospective method of investigation, a biochemical blood test revealed signs characteristic of Reactive liver damage.

4. When we analyzed the blood clotting system, indicators indicating blood clotting prevailed.

REFERENCES

Green M.S., Zeniman J., Cohen D., Wither I., Baliser R.D. /Risk Assessment and Risk Communication

Strategies for Bioterrorism Preparedness //Springer Science & Business Media; Dordrecht, The

Netherlands: 2007

Conrow E. H., Polmann L. D. / Effective risk management: some keys to success, second edition.

Understanding. 2004; 6:44. doi: 10.1002/inst.20046244.

De las Heras-Pedrosa K., Sanchez-Nunez P., Pelaez H.I. / Sentiment analysis and understanding of

emotions during the COVID-19 pandemic in Spain and its impact on digital ecosystems. // Intern. J.

Environment. Res. Healthcare. 2020; 17:5542. doi: 10.3390/ijerph17155542.

Iglesias-Sanchez P.P., Witt G.F.V., Cabrera F.E., Hambrino-Maldonado C. / Contagion of the senses

during the COVID-19 pandemic crisis: a case of lockdown in Spain. // International J. Environment.

Res. Healthcare. 2020; 17:5918. doi: 10.3390/ijerph17165918.

Pavlic J., Tomasic T., Kozhuh I. / The impact of new technologies on the effectiveness of product

placement: a preliminary study from the perspective of interactive marketing. //J. Res. To interact.

Mark. 2021: 10.1108/JRIM-02-2021-0041.

Popova A.Yu. et al. / Experience of international cooperation in organizing anti-epidemic measures by

healthcare institutions in the context of the covid-19 pandemic in the Republic of Uzbekistan, DOI:

10.21055/0370-1069-2021-3-122-128

European Commission. Coronavirus: Commission presents EU vaccine strategy. 2020. [(accessed 24

January 2022)]. https://ec.europa.eu/commission/presscorner/detail/en/ip_20_1103

Guan WJ, Ni ZY, Hu Y, Liang WH, Ou CQ, He JX, et al. /Clinical Characteristics of Coronavirus

Disease 2019 in China. // N Engl J Med. 2020. [Epub ahead of print]

https://doi.org/10.1056/NEJMoa2002032

Sobirova G.N., Bafoyeva Z.O. Determination and Analysis of Changes in the Hepatobiliary System in

Patients with Covid-19 // American Journal of Medicina and Medical Sciences.- 2021.-11(2).- P.145-

147.

Sobirova G. N., Bafoeva Z.O., Usmankhodzhayeva A. A. Clinical and biochemical parameters of

patients with Covid-19 with impaired liver function before and after treatment.// Тошкент тиббиёт

академияси, Ёш олимлар журнали.- Тошкент.- 2023.- №1(06).- Б. 105-112

Uzbekistan confirms first coronavirus case — govt.

Available at:

https://www.reuters.com/article/health-coronavirus-uzbekistan-idUSL8N2B802F (accessed

16.01.2022).

Jasim SA, Mahdi RS, Bokov DO, Najm MAA, Sobirova GN, Bafoyeva ZO, Taifi A, Alkadir OKA,

Mustafa YF, Mirzaei R, Karampoor S./The deciphering of the immune cells and marker signature in COVID-19 pathogenesis: An update //J Med Virol . 2022 Jul 14;10.1002/jmv.28000. doi:

10.1002/jmv.28000. Epub ahead of print. PMID: 35835586; PMCID: PMC9350195. C.1-21

Chan, J.F., Kok, K.H., Zhu, Z., Chu, H., To, K.K., et al. (2020) Genomic Characterization of the 2019

Novel Human-Pathogenic Coronavirus Isolated from a Patient with Atypical Pneumonia after Visiting

Wuhan. Emerging Microbes & Infections, 9, 221-236. https://doi.org/10.1080/22221751.2020.1719902