

Evaluation of Patients Diagnosed with COVID-19

COVID-19 Tanılı Hastaların Değerlendirilmesi

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ÖZET

Amaç: Bu çalışma, COVID-19 hastalığının tanı koyma, tedavi ve mücadele konularında literatüre yardımcı olmak adına; incelediğimiz COVID-19 tanılı hastalarla ilgili tecrübelerimizi, analizlerimizi ve sonuçlarımızı paylaşmak için hazırlandı. Çalışmamızda COVID-19 hastalarının epidemiyolojik, klinik, laboratuvar ve radyolojik özellikleri ile tedavilerini ve klinik sonuçlarını bildiriyoruz.

Materyal ve Metot: Çalışma tanımlayıcı tipte bir epidemiyolojik araştırmadır. Kahramanmaraş ilinde, 16 Mart 2020 tarihi ile 13 Nisan 2020 tarihleri arasında Sağlık Bakanlığı'na bağlı 2. basamak devlet hastanesine başvuran COVID-19 nedeniyle değerlendirilen, takip ve tedavisi yapılan hastalar çalışmaya dâhil edildi. Hastalara ait yaş, cinsiyet, başvuru şikâyeti, kan tahlili düzeyleri, yapılan görüntülemeler, polimeraz zincir reaksiyonu (PCR) test sonuçları, prognoz ile ilgili veriler kaydedildi. Çalışmadaki verilerin değerlendirilmesinde SPSS v.17.0 paket programı kullanıldı.

Bulgular: COVID-19 tanısı alan 73 hasta incelendi. Hastaların %42,5'i 60 yaş ve üstü bireylerdi. COVID-19 tanılı hastaların başvuru şikâyetleri incelendi; %7,5'i asemptomatik olarak saptandı, semptomatik hastalarda ise en sık şikâyetler; öksürük, ateş ve nefes darlığı idi. COVID-19 tanısı alan hastaların %45,2'sinin ek hastalığı vardı. Hastaların %57'sinde lenfositopeni, %42,3'ünde hipokalsemi saptandı.

Sonuç: COVID-19 başvurularında tipik semptomlar önemli olsa da atipik semptomlar açısından da sağlık çalışanları dikkatli olmalıdır. Tanıda öncelikle PCR testi kullanılır fakat Toraks Bilgisayarlı Tomografi'de (BT) COVID-19 ile uyumlu görüntü saptanması COVID-19 tanısında daha etkindir. COVID-19 hastalarında D-dimer, C-reaktif protein (CRP), prokalsitonin (PCT), ferritin değerleri yüksek; lenfosit değerleri ise düşüktür. COVID-19 hastalarında hemogram, lenfosit, D-dimer ve akut faz reaktanları bakılması; hastalara uygulanan tedavi şekli ve prognozunu belirlemede yardımcı olacaktır. Hastaların çoğunluğun genel durumu iyi ve ölüm oranları da düşüktür.

Anahtar Kelimeler: COVID-19, Koronavirüs, SARS-CoV-2

ABSTRACT

Aim: This study was conducted to share our experiences, analyses and results related to patients diagnosed with COVID-19 with the aim of contributing to the literature in the diagnosis and treatment of and the combat against the COVID-19 disease. Here, we report the epidemiological, clinical, laboratory and radiological characteristics of COVID-19 patients as well as their treatments and clinical outcomes.

Material and Method: This study was conducted as a descriptive and epidemiological study. We included patients admitted to the secondary step public hospital in Kahramanmaraş, affiliated with the Ministry of Health, and who were evaluated, followed-up and treated for diagnosed of COVID-19. The patients' data such as age, gender, complaints, blood test results, imaging findings, polymerase chain reaction (PCR) test results and prognosis were recorded.

Results: 73 patients diagnosed with COVID-19 were examined. 42.5% of the patients were aged 60 and over. The most complaints of the patients diagnosed with COVID-19, were cough, fever and shortness of breath. 57% of the patients had lymphocytopenia, and 42.3% had hypocalcemia.

Conclusion: While the typical symptoms are crucial in patients applying for COVID-19, healthcare workers should also pay attention to atypical symptoms. The PCR test is primarily used in the diagnosis of COVID-19, but detecting compatibility with COVID-19 in computerized tomography (CT) of the thorax is more effective in diagnosis. COVID-19 patients have high D-dimer, C-reactive protein (CRP), procalcitonin (PCT) and ferritin levels and low lymphocyte levels. Most patients were observed to have a good general condition, with low overall mortality rates.

Key Words: COVID-19, Coronavirus, SARS-CoV-2

INTRODUCTION

Coronaviruses (CoV) are positive-sense and single-stranded RNA viruses (Zhou et al., 2019). CoV is classified in types of Alpha, Beta, Gamma and Delta. To date, 7 Coronaviruses have been identified to infect humans (Chen et al., 2020). The most known are the SARS-CoV, the MERS-CoV and the new type CoV, associated with the COVID-19 disease. CoV include a family of viruses that can cause a wide range of presentations from mild infections such as upper respiratory tract infection to severe infections with high mortality risk such as SARS and MERS (COVID-19, 2020; Novel, 2020; Zhu et al., 2020). The world has witnessed the SARS-CoV infection in 2003 and the MERS-CoV infection in 2012 (COVID-19, 2020). On December 31st, 2019, the World Health Organization (WHO) reported pneumonia cases of unknown etiology in Wuhan, China. The WHO defined the cause for these cases to be a new type CoV, named "2019-nCoV", "COVID-19" or "SARS-CoV-2" (Huang et al., 2020). The COVID-19 disease caused by the virus has spread to Europe and the Americas in the following days, subsequently affecting the entire globe. The WHO declared a pandemic on March 11th, 2020. Turkey witnessed the first COVID-19 case on March 11th, 2020. In the following weeks, the number of cases continued to increase.

COVID-19 presents with mild upper respiratory tract infection, shortness of breath and respiratory failure, similar to colds, accompanying sepsis, septic shock and systemic symptoms presenting with multi-organ failure and various clinical pictures including respiratory, enteric, hepatic, nephrotic and neurological involvement (COVID-19, 2020; WHO, 2020). In addition to typical respiratory symptoms (fever, dry cough and shortness of breath), COVID-19 (+) patients may also present with atypical symptoms (headache, weakness, fatigue, muscle aches, diarrhea, vomiting, thromboembolic events, confusion, decreased sense of smell and taste, hemoptysis, etc.) (Jin et al., 2020; WHO, 2020).

Besides these symptoms, COVID-19 (+) patients may also be observed to be asymptomatic. The COVID-19 report of the WHO on People's Republic of China has stated that the cases presenting with severe disease and a high risk of mortality generally consisted of elderly patients or individuals with an accompanying systemic disease. Children and infants can also be infected with SARS-CoV-2. However, the disease is less incident in these age

groups and has a good prognosis (GONHC, 2020; Jin et al., 2020).

COVID-19 has spread rapidly between people, spreading all over the world in a short time. The disease is mainly transmitted through the inhalation of respiratory droplets, arising by coughing and sneezing. Another way of transmission is contact with these droplets due to coughing, sneezing and touching, as individuals come into contact with other people's hands, touch their mouths, nose or eye mucosa with their hands and shake hands with other people (Bernheim et al., 2020; COVID-19, 2020). In addition to its effects on the respiratory system, the COVID-19 disease also affects the heart, the circulatory system, blood parameters (changing the hemoglobin structure and leading to reduced transport of O₂ and CO₂ to hemoglobin in particular), the muscles and the neurological system (Madjid et al., 2020; Wenzhong et al., 2020).

The diagnosis of COVID-19 is based on anamnesis, epidemiological history, clinical symptoms, lung imaging and the detection of SARS-CoV-2 nucleic acid and antibodies specific to serum. The "rRT-PCR" test is performed to diagnose COVID-19. The ELISA and the rapid antibody test, which detects IgM/IgG, are also used in diagnosis (HCPT, 2020; Xu et al., 2020). Hemogram, biochemistry, C-reactive protein (CRP), procalcitonin (PCT), ferritin, D-dimer and troponin tests and other tests are key in diagnosing, organizing treatment strategies for and evaluating the clinical course of the disease (Bornstein et al., 2020; Guan et al., 2020; Yin et al., 2020). The designated imaging methods in the diagnosis of COVID-19 are thorax CT and Chest Radiography (Lan et al., 2020; Song et al., 2020).

According to WHO guidelines, early antiviral treatment can reduce the incidence of severe and critical cases. However, there is currently no specific and clinically-proven antiviral treatment for COVID-19, and vaccine and drug studies are still ongoing. Treatment is symptomatic, with oxygen therapy being the main method in patients with respiratory distress (WHO, 2020). The COVID-19 Guidelines of the Science Board of the Ministry of Health have explained the drugs used for treatment, found to be useful for COVID-19 (+) patients, as Chloroquine, Favipiravir, Remdesivir, Oseltamivir and Azithromycin (COVID-19, 2020). The WHO also emphasized that "convalescent plasma therapy with pathogen immunotherapy is a recommended treatment in pandemic outbreaks" (HCPT, 2020).

The COVID-19 pandemic is a global war against the CoV, where all humans are on the same side. In order to be victorious in this war, humanity needs knowledge, experience, technology and equipment. Just like the disease, the literature and clinical experience for COVID-19 show rapid progression. Clinical practices are shaped in line with the knowledge and experience in the literature. This dynamically-shaped learning process may involve daily changes in the information in the literature. This article was prepared to share our experiences, analyses and results in patients diagnosed with COVID-19 with the aim of contributing to the literature in the diagnosis and treatment of and the combat against COVID-19.

MATERIAL and METHOD

Coronaviruses (CoV) are positive-sense and single-stranded RNA viruses (Zhou et al., 2019). CoV is classified in types of Alpha, Beta, Gamma and Delta. To date, 7 Coronaviruses have been identified to infect humans (Chen et al., 2020). The most known are the SARS-CoV, the MERS-CoV and the new type CoV, associated with the COVID-19 disease. CoV include a family of viruses that can cause a wide range of presentations from mild infections such as upper respiratory tract infection to severe infections with high mortality risk such as SARS and MERS (COVID-19, 2020; Novel, 2020; Zhu et al., 2020). The world has witnessed the SARS-CoV infection in 2003 and the MERS-CoV infection in 2012 (COVID-19, 2020). On December 31st, 2019, the World Health Organization (WHO) reported pneumonia cases of unknown etiology in Wuhan, China. The WHO defined the cause for these cases to be a new type CoV, named "2019-nCoV", "COVID-19" or "SARS-CoV-2" (Huang et al., 2020). The COVID-19 disease caused by the virus has spread to Europe and the Americas in the following days, subsequently affecting the entire globe. The WHO declared a pandemic on March 11th, 2020. Turkey witnessed the first COVID-19 case on March 11th, 2020. In the following weeks, the number of cases continued to increase.

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RESULTS

Of the 73 patients diagnosed with COVID-19, 32.9% were female and 67.1% were male. 42.5% of the patients were aged 60 years and over, and 5.5% were under 20 years of age. Only 1.4% of the patients were of Syrian nationality, with all the remaining patients being citizens of the Republic of Turkey. 2.7% of the patients consisted of healthcare workers (Table 1).

The first COVID-19 case in our hospital was reported in the second half of March 2020, and the number of cases continued to increase in the following weeks. The patients were examined in terms of distribution according to weeks, and the sources of the cases were determined to be domestic in 90.4%. Only 30.1% of the cases had a history of direct contact with a COVID-19 positive case. 86.3% of the cases were stated to have a good general condition, while only 4.1% was reported to have a poor general condition (Table 2).

Table 1: Some socioeconomic characteristics of patients diagnosed with COVID-19.

	s	%
Gender		
Female	24	32.9
Male	49	67.1
Age		
0 - 19	4	5.5
20 - 29	10	13.7
30 - 39	13	17.8
40 - 49	9	12.3
50 - 59	6	8.2
60 - 69	11	15.1
70 - 79	12	16.4
80 and over	8	11.0
Nationality		
Turkish	72	98.6
Syrian	1	1.4
Healthcare worker		
Yes	2	2.7
No	71	97.3

Table 2: Admission characteristics of patients diagnosed with COVID-19.

	s	%
Admission date		
March 16th - 22nd, 2020	2	2.7
March 23rd - 29th, 2020	17	23.3
March 30th - April 5th, 2020	24	32.9
April 6th - 12th, 2020	29	39.7
April 13th - 19th, 2020	1	1.4
Pregnancy		
Yes	1	1.4
No	72	98.6
Source		
Domestic	66	90.4
Abroad	7	9.6
History of direct contact		
Yes	22	30.1
No	51	69.9
General condition		
Good	63	86.3
Moderate	7	9.6
Poor	3	4.1

7.5% of the patients admitted asymptotically. In patients with symptomatic presentation, the most common symptoms at admission were cough, fever, and shortness of breath. Other complaints included sore throat, headache, nausea-vomiting, myalgia, and syncope. 45.2% of the patients had an accompanying disease. The most common accompanying disease was hypertension (HT) with 20.5%. 58.9% of the patients were followed-up within the hospital. 17.8% of the patients were discharged with

treatment recommendations including isolation at home. 21.9% of the patients were discharged, and 1.4% were exitus. (Table 3).

Table 3: The complaints, accompanying diseases and follow-up status of patients diagnosed with COVID-19.

	s	%
Admitted with complaints (n=40)		
Yes	37	92.5
No	3	7.5
Complaints* (n=40)		
Fever	16	40.0
Cough	19	47.5
Shortness of breath	12	30.0
Sore throat	2	5.0
Other (headache, nausea-vomiting, myalgia, syncope)	4	10.0
Accompanying disease (n=73)		
Yes	33	45.2
No	40	54.8
Accompanying disease* (n=73)		
Heart disease	8	11.0
Respiratory System Disease	6	8.2
Diabetes Mellitus	8	11.0
Hypertension	15	20.5
Chronic Kidney Failure	3	4.1
Rheumatic Disease	3	4.1
Other (Prostate hyperplasia, Ulcerative Colitis)	9	12.3
Follow-up status		
Isolation at home	13	17.8
Follow-up at hospital	43	58.9
Discharged	16	21.9
Exitus	1	1.4

95.9% of the patients who admitted to the emergency department and were diagnosed with COVID-19 were determined to have a CT imaging. PCR was examined in all patients. PCR findings were positive in 45.2% of the patients. Considering CT findings, 76.6% of PCR-positive patients and 100.0% of PCR-negative patients were found to have compatibility with COVID-19. The difference between the two groups was statistically significant (p=0.012). PCR-negative patients had higher percentages of CT compatible with COVID-19 compared to PCR-positive patients. Only 17.8% of the patients were admitted to the intensive care unit, and 5.5% of these were intubated. During isolation and follow-up, the total discharge rate rose to 32.9%. Currently, 49.3% of the patients are still followed-up in the hospital, and 16.4% continue their isolation at home. Examining ICU hospitalization, intubation, and prognosis

according to PCR findings, no statistically significant difference was found (Table 4).

Table 4: CT and PCR findings and other hospital status of patients diagnosed with COVID-19.

	PCR				Total		P
	Positive		Negative		s	%	
	s	%	s	%	s	%	
CT							0.051 ¹
Yes	30	90.9	40	100	70	95.9	
No	3	9.1	0	0.0	3	4.1	
CT finding							0.012 ^{2,3}
Compatible with COVID-19	23	76.6	40	100	63	90.0	
Compatible with Mixed Infection	2	6.7	0	0.0	2	2.9	
Normal	5	16.7	0	0.0	5	7.1	
Intensive care hospitalization							0.94 ¹
Yes	6	18.2	7	17.5	13	17.8	
No	27	81.8	33	82.5	60	82.2	
Intubation							0.32 ²
Yes	3	9.1	1	2.5	4	5.5	
No	30	90.9	39	97.5	69	94.5	
Follow-up status							0.89 ⁴
Isolation at home	5	15.2	7	17.5	12	16.4	
Follow-up at hospital	17	51.5	19	47.5	36	49.3	
Discharged	10	30.3	14	35.0	24	32.9	
Exitus	1	3.0	0	0.0	1	1.4	

¹ p value by Pearson's chi-squared test

²p value by Fisher's exact test

³To be able to perform Fisher's exact test, groups compatible with COVID-19 and mixed infection were combined.

⁴ p value by Pearson's chi-squared test after excluding exitus cases

The correlation between blood test results and PCR positivity was examined. PCR (-) patients were found to have statistically significantly higher blood leukocyte counts compared to PCR (+) patients (p=0.009). PCR (-) patients were also determined to have statistically significantly higher blood neutrophil counts compared to PCR (+) patients (p=0.003). The patients' lymphocyte/leukocyte percentage were examined. PCR (+) patients significantly higher lymphocyte levels compared to PCR (-) (but CT compatible with COVID-19) patients. The difference between PCR (-) and PCR (+) patients in terms of the mean lymphocyte/leukocyte percentage was found to be statistically significant (p=0.005). Patients diagnosed with COVID-19 were found to have high mean blood CRP levels. Mean blood CRP level was 36.2 mg/L in PCR (+) patients and 56.5 mg/L in PCR (-)

patients (SS:59.1). The difference here was statistically significant ($p=0.004$). The patients were found to have high blood D-dimer levels. Mean blood D-dimer levels were 995.7 ng/mL in PCR (+) patients and 1823.3 ng/mL in PCR (-) patients. The patients were found to have high blood PCT levels. Mean blood PCT levels were

0.25 ng/mL in PCR (+) patients and 0.73 ng/mL in PCR (-) patients. The patients were found to have a mean blood calcium level of 8.9 mg/dL. We found that the patients had high blood ferritin levels. Mean blood ferritin levels were 284.4 ng/mL in PCR (+) patients and 240.7 ng/mL in PCR (-) patients. (Table 5).

Table 5. Some blood test results and their correlation with PCR in patients diagnosed with COVID-19.

	PCR								
	Positive			Negative			Total		
	n	Mean (SD*)	Median (Min - Max)	n	Mean (SD*)	Median (Min - Max)	n	Mean (SD*)	Median (Min - Max)
Leukocyte	33	7556.7 (4050.0)	6340.0 (3790.0 - 17310.0)	40	10091.9 (4661.9)	9340.0 (2980.0 - 23970.0)	73	8945.9 (4547.1)	8395.0 (2980.0 - 23970.0)
Neutrophil	32	5049.4 (3616.7)	3635.0 (770.0 - 16170.0)	40	7777.8 (4638.4)	6830.0 (1680.0 - 21320.0)	72	6565.2 (4403.7)	5535.0 (770.0 - 21320.0)
Lymphocyte	32	1928.8 (1456.6)	1535.0 (360.0 - 7480.0)	40	1447.8 (878.8)	1220.0 (220.0 - 4000.0)	72	1661.5 (1186.8)	1435.0 (220.0 - 7480.0)
Lymphocyte/L eukocyte percentage (%)	32	26.9 (14.3)	25.4 (2.9 - 52.2)	40	17.3 (11.6)	13.5 (1.6 - 47.7)	72	21.5 (13.7)	20.3 (1.6 - 52.2)
CRP	32	36.2 (59.7)	11.1 (3.0 - 270.0)	39	56.5 (59.1)	36.0 (3.0 - 249.0)	71	47.3 (59.8)	24.9 (3.0 - 270.0)
D-dimer	22	995.7 (933.1)	680.5 (190.0 - 3350.0)	32	1823.3 (3339.5)	682.0 (169.0 - 14700.0)	54	1486.2 (2652.6)	680.5 (169.0 - 14700.0)
Ferritin	23	284.4 (325.3)	174.0 (10.0 - 1298.0)	25	240.7 (231.5)	135.0 (52.0 - 899.0)	48	261.7 (278.2)	153.5 (10.0 - 1298.0)
Calcium	32	8.9 (0.6)	8.9 (7.6 - 10.3)	39	8.9 (0.6)	8.9 (7.6 - 9.9)	71	8.9 (0.6)	8.9 (7.6 - 10.3)
Procalcitonin	19	0.25 (0.51)	0.1 (0.1 - 2.5)	24	0.73 (1.57)	0.1 (0.1 - 6.2)	43	0.52 (1.23)	0.1 (0.1 - 6.2)

* Standard Deviation

1 p value by Mann - Whitney U Test

2 p value by Student's T-Test

13.9% of the patients were observed to have leukopenia, while 16.7% had leukocytosis. 6.9% of the patients were determined to have neutropenia, while 23.6%, had neutrophil elevation and 57% lymphocytopenia. 78.9% of the patients diagnosed with COVID-19 were found to have high blood CRP levels, 64.8% had high blood D-dimer levels, and 50% had high blood ferritin levels. However, 42.3% of the patients had low blood calcium levels. Blood PCT levels were considered high in 73.2% of the patients (Table 6).

Table 6: Some blood test results of patients diagnosed with COVID-19.

		S	%
Leukocyte (n=72)	Low	10	13.9
	Normal	50	69.4
	High	12	16.7
Neutrophil (n=72)	Low	5	6.9
	Normal	50	69.4
	High	17	23.6
Lymphocyte (n=72)	Low	41	57.0
	Normal	26	36.1
	High	5	6.9
CRP (n=71)	Normal	15	21.1
	High	56	78.9
D-dimer (n=54)	Normal	19	35.2
	High	35	64.8
Ferritin (n=48)	Low	1	2.1
	Normal	23	47.9
	High	24	50.0
Calcium (n=71)	Low	30	42.3
	Normal	40	56.3
	High	1	1.4
Procalcitonin (n=41)	Normal	11	26.8
	High	30	73.2

DISCUSSION

The COVID-19 disease can have clinical presentations ranging from sepsis, septic shock, multi-organ failure and systemic symptoms, characterized by mild upper respiratory tract infection, similar to common cold, and respiratory failure requiring support in intensive care with respiratory, enteric, hepatic, nephrotic and neurological involvement (COVID-19, 2020; Novel, 2020; WHO, 2020).

One study found that 90% of patients were aged 30 years and over (Wu et al., 2020). Another study found similar rates, with patients aged 70 years and over comprising 25% of the sample (Huang et al., 2020). The results found in our study are in accordance with the literature, where

older patients were in high proportion. The high rate of elderly patients has resulted in the legal decision of a curfew imposed on people over 65 years of age in Turkey. We believe that this curfew is an effective protective measure in terms of the risk of transmission to older patients. Previous studies have found the rate for patients aged under 20 years to be 2% (Özcan et al., 2020). Similar to other research, this rate was quite low in our study. The low number of pediatric cases may be due to low rates of admission to hospitals, as the disease is often asymptomatic and has a good prognosis in this age group. With another curfew imposed on those under 20 years of age and the halting of education in schools, the risk of asymptomatic COVID-19 (+) cases aged below 20 years transmitting the infection to others will be reduced.

Considering the gender distribution of COVID-19 patients, men were found to have a higher incidence of COVID-19 compared to women. This may be due to the fact that men are more active in business life and thus are in a higher risk group in terms of transmission. During this epidemic, healthcare workers are among the highest risk groups in terms of COVID-19 transmission. Despite all protective measures, 2.7% of our patients consisted of healthcare workers. One study found that the disease had a mild course resulting in complete recovery in most patients with COVID-19 infection. The same study also highlights that approximately 81% of COVID-19-confirmed cases developed mild to moderate disease without viral pneumonia, with the remaining 19% involving viral pneumonia, where severe disease was observed in 14% of these viral pneumonia cases (İnal et al., 2020). Our results support these findings in the literature, with most cases having good general condition. During follow-up, only 17.8% of the patients were hospitalized in ICU and 5.5% were intubated, while 1.4% of the patients resulted in exitus. After follow-up and treatment, most of our patients were discharged with the recommendation of isolation at home. We believe that the low mortality rates and the high recovery/discharge rates in our country can be attributed to the success of the health policies and the healthcare workers in the country.

The COVID-19 guidelines of the Science Board of the Ministry of Health states that patients may be asymptomatic or may present with atypical

symptoms (weakness, fatigue, muscle aches, diarrhea, vomiting, thromboembolic events, confusion, decreased sense of smell and taste, etc.) besides the typical respiratory symptoms (fever, dry cough and shortness of breath). In more severe cases, pneumonia, severe acute respiratory infection, kidney failure and even death may occur (COVID-19, 2020; Huang et al., 2020). Our results were similar to the literature, where 7.5% of patients were asymptomatic. Patients presenting with typical symptoms and findings may be considered for COVID-19 in differential diagnosis, but having knowledge of and considering atypical symptoms and signs will help shorten the time to diagnosis and positively affect prognosis. Therefore, knowing the atypical symptoms and signs of COVID-19 carry much importance.

According to the COVID-19 report of the WHO on China, cases with severe disease progression and high mortality risk mostly consist of individuals with an accompanying disease (COVID-19, 2020). In our study, almost half of the patients diagnosed with COVID-19 were found to have an accompanying disease, with the most common being HT, similar to the literature.

Both Madjid et al. (2020) and Wenzhong et al. (2020) observed that the COVID-19 disease affected the respiratory system, the cardiovascular system, blood parameters (particularly hemoglobin), the muscles and the neurological system. COVID-19 has been reported to cause a heavy burden of inflammation, able to lead to vasculitis, myocarditis and cardiac arrhythmia (Madjid et al., 2020; Wenzhong et al., 2020). The COVID-19 prevention and treatment handbook states that, of the blood tests suggested, hemogram, biochemistry, CRP, PCT, ferritin, D-dimer and troponin tests and other examinations deemed appropriate by physicians can help in diagnosis, treatment strategies and evaluation of the clinical course. Worldwide research on CoV report that COVID-19 patients have high PCT, CRP and D-dimer levels and low lymphocyte values (Bornstein et al., 2020; HCPT, 2020; Yin et al., 2020). The presence of these hematological disorders (coagulopathy) is a risk factor for poor prognosis. Patients with a low total lymphocyte count at the onset have been reported to have poor prognosis (HCPT, 2020; Guan et al., 2020). In this regard, our findings are correlated with

the literature and other related research. Lymphocytopenia was detected in 57% of our patients diagnosed with COVID-19. They were found to have CRP, PCT and ferritin levels, which were examined as acute phase reactants. The patients were also found to have high blood D-dimer levels. The high D-dimer levels of our patients indicate that they should be considered to have a high risk for thromboembolic events. Examining the hemogram, lymphocyte and D-dimer levels and all acute phase reactants of patients suspected to have COVID-19 at the first examination will be effective in the determination of treatment strategies and prognosis. The drug "Chloroquine" which is used in the treatment of COVID-19, prolongs the QT distance in ECG, which is also prolonged in case of hypocalcemia. Nearly half of our patients had hypocalcemia. Thus, examining the calcium levels of patients during treatment and treating hypocalcemia present are crucial for prognosis.

According to a study by Lan et al. (2020), thoracic imaging in the diagnosis of COVID-19 carries great importance in diagnosis, monitoring of therapeutic efficacy and evaluation of discharge. (Lan et al., 2020). In the diagnosis of COVID-19, thorax CT and chest radiography are used as imaging methods (Wu et al., 2020). Huang et al. and Song et al. both detected findings that were radiologically compatible with bilateral lung pneumonic infiltration (ground-glass densities and reticular/interlobular septal thickening) (Huang et al., 2020; Song et al., 2020; WHO, 2020). In our study, the thorax imaging performed on the patients yielded similar findings to the literature. Almost all our patients underwent CT of the thorax, and almost all CT results were found to be compatible with COVID-19. All patients suspected to have COVID-19 were tested for PCR, and approximately half resulted PCR-positive. We believe that, when patients suspected to have COVID-19 yield thorax imaging findings compatible with COVID-19, it would be more appropriate for their prognosis to be evaluated for COVID-19 and to initiate treatment early, regardless of the PCR result.

The COVID-19 Guidelines of the Science Board of the Ministry of Health have specified the COVID-19 treatment protocols (COVID-19, 2020). According to recommendation from the Board, a COVID-19 treatment was prepared for patients diagnosed with COVID-19. In fact, treatment is

based on the symptoms, with oxygen therapy being the main method for patients with respiratory distress (HCPT, 2020). In accordance with permission from the Ministry, plasma treatment, as a treatment method specific to COVID-19, began to be applied in Turkey as of April 2020 (PT, 2020).

CONCLUSION

While the typical symptoms are crucial in patients applying for COVID-19, healthcare workers should also pay attention to atypical symptoms. The PCR test is primarily used in the diagnosis of COVID-19 but detecting compatibility with COVID-19 in CT of the thorax is more effective in diagnosis. COVID-19 patients have high D-dimer, CRP, PCT and ferritin levels and low lymphocyte levels. Examining the hemogram, lymphocyte, D-dimer and acute phase reactants of COVID-19 patients can assist in the determination of the type of treatment and prognosis. Most patients were observed to have a good general condition, with low overall mortality rates.

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