

ORIGINAL ARTICLE

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Demographic and clinical features of Covid-19 cases in Serik, Turkey** Mustafa Altintas¹,  Gulsum Akdeniz²,  Bilgehan Gurbuz³,  Yusuf Kara⁴,  Osman Celbis⁵**¹*Serik State Hospital, Department of Otolaryngology, Antalya, Turkey*²*Serik State Hospital, Department of Infection Diseases and Clinical Microbiology, Antalya, Turkey*³*Serik State Hospital, Department of Medical Pulmonology, Antalya, Turkey*⁴*Serik State Hospital, Department of Medical Biochemistry, Antalya, Turkey*⁵*Inonu University, Faculty of Medicine, Department of Forensic Medicine, Malatya, Turkey*

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Abstract

There is a need for new research on the Covid-19 outbreak that affects the whole world. This study is presented as the first in a series of cases exist in Turkey. Our aim was to investigate the demographic and clinical features of Covid-19 patients and contribute to the development of new strategies. The medical records of 56 patients diagnosed with Covid-19 in Serik State Hospital, a pandemic hospital in Turkey, have been retrospectively evaluated up until May 31, 2020. The demographic and clinical characteristics as well as radiological and laboratory data of the patients were followed up until June 5, 2020 and compared with the data published in the literature. Thirty of the patients were male and twenty-six were female. Mean age was 41.3, average height was 163.5 cm and mean weight was 70.4 kg. Mean body mass index was 25.8. Twenty five patients had a chronic disease and twenty two patients were smokers. The most common clinical symptoms were fever (62.5%), cough (41.1%) and shortness of breath (21.4%). There were no active complaints in twenty four of the patients. Radiologically, nineteen patients had multifocal ground-glass opacity. The most prevalent laboratory findings were lymphopenia (30.3%), CRP elevation (62.5%) and AST elevation (42.8%). The findings of twenty three patients were normal. Forty seven patients were Rh positive, and nine patients were Rh negative. The Covid-19 epidemic continues with its global effects and affect people at various degrees. There are no clear clinical results and treatment options yet. Therefore, larger studies are needed.

Keywords: Covid-19, Coronaviruses, pandemic Turkey**Introduction**

The first cases of pneumonia of unknown origin were detected in employees of the marketplace selling seafood in Wuhan, Hubei province of the People's Republic of China in early December 2019 and on January 7, the China Centre for Disease Control and Prevention (CDC) isolated the virus from a patient's tissue that was used for cleaning the throat and reported that it was a new type of coronavirus [1]. The Covid-19 (Corona Virus Disease 2019) outbreak caused by this virus, which was identified by the World Health Organization (WHO) as 2019-nCoV (Covid-19) in February 2020, quickly spread to other provinces in China, and then all over the world, primarily to Europe [2,3]. There are many unexplained issues regarding Covid-19 in the early stages that lead to complications such as severe acute respiratory infections, severe pneumonia, pulmonary oedema, acute respiratory distress syndrome (ARDS) and multiple organ failure in some patients [4]. Since the isolation of the novel corona virus, studies on Covid-19 have begun in many countries [5].

Research regarding this outbreak that has affected the world for the past five months, is also needed in Turkey. In Turkey, where the first case was diagnosed on March 11, 2020, the number of cases rapidly increased to 670 patients in 10 days [6]. This study was conducted at Antalya Serik State Hospital, the district which includes the Belek tourism region of Antalya, famous for its golf courses. The cancellation of reservations by many domestic and foreign tourists has had negative consequences for the tourism sector. In this study, the clinical and demographic characteristics of our patients diagnosed with Covid-19, and our approaches to diagnosis and treatment were investigated. According to the literature analysis we have conducted, this is the first study of Covid-19 cases in Turkey.

Materials and Methods

In Serik State Hospital, that was declared a Pandemic Hospital in the Antalya region, between 11 March and 31 May 2020 the files of patients who were hospitalized with a diagnosis of Covid-19, were examined retrospectively. Clinical symptoms such as fever, cough, shortness of breath, biochemical parameters, radiological findings, demographic features such as height, weight, gender, age, and accompanying chronic diseases such as diabetes

*Corresponding Author: Mustafa Altintas Serik State Hospital Department of Otorhinolaryngology, Antalya, Turkey, E-mail: dr_altintas@yahoo.com

and hypertension, were recorded and compared with the data previously published in the literature.

At the time of admission, throat and nose swab samples were obtained from all patients and sent to the laboratory under the appropriate conditions. Additionally, chest tomography was requested for radiological analyses. The diagnosis of all cases was confirmed by real-time polymerase chain reaction (RT-PCR). The results were followed up until June 5, 2020 and compared with the data previously published in the literature. This study was approved by the Republic of Turkey Ministry of Health Directorate General of Health and the Committee on Scientific Research and Publication Ethics at Inonu University. If data in the records was missing or an explanation was required, we have obtained the data by contacting the relevant physician or other healthcare providers directly to complete it.

Results

Demographic and Clinical Characteristics

Of the 56 patients with Covid-19 included in the study, thirty nine (69.6%) of them were living in Serik. Fourteen (25.0%) patients were not living in Serik and came to visit. Three (5.3%) patients had been released from prison. Six patients were married. Nine patients was a hotel employee. Five patients had a history of contact with a relative living abroad. The mean age was 41.3 (6 month–89 years) and thirty (53.5%) patients were male and twenty-six (46.5%) patients were female. Ten patients (17.8%) was younger than 18 years, fifteen patients (26.7%) were aged between 19-39 years, eight patients (14.2%) were aged between 40-49 years, six patients (10.7%) were aged between 50-59 years, thirteen patients (23.2%) was aged between 60-69 years and four patients were older than 70 years. In addition, the average height of these patients was 163.5 cm, and mean weight was 70.4 kg. Mean body mass index was 25.8 and patients were evaluated as marginally overweight.

Most of the patients were male with comorbidities and often middle-aged or older. None of the patients were healthcare personnel. In addition, twenty two patients (39.3%) had a history of smoking (Table 1). Twenty five of the patients (44.6%) had chronic disease. Sixteen patients (28.5%) had cardiovascular and cerebrovascular diseases, eleven patients (19.6%) had an endocrine disease, four patients (7.1%) had a respiratory disease, and five patients (8.9%) had a digestive system disease (Table 1).

The most common complaint at the time of admission was fever and cough. These were followed by a shortness of breath (Table 2). Clinical symptoms were fever in thirty patients (62.5%), cough in twenty three patients (41.1%), shortness of breath in twelve patients (21.4%), muscle pain in eight patients (14.2%), sore throat in five patients (8.9%), confusion in six patients (10.7%), three patients (5.3%) had anosmia, three patients (5.3%) had nausea and vomiting, and twenty four patients (42.8%) were asymptomatic (Table 1).

Table 1. Demographics and clinical characteristics

Patients (n=56)	
Age, years	
Mean	41.3
Range	6 month-89 years
≤18	10 (17.8%)
19-39	15 (26.7%)
40-49	8 (14.2%)
50-59	6 (10.7%)
60-69	13 (23.2%)
≥70	4 (7.1%)
Sex	
Female	26 (46.5%)
Male	30 (53.5%)
Height mean (cm; min - max)	163.5 (60-175)
Weight mean (kg; min - max)	70.4 (8-106)
Mean body mass index (min - max)	25.8 (24.5-27.6)
Smoking history	
Never smoked	34 (60.7%)
Active smoker	22 (39.3%)
Chronic medical condition	
Cardiovascular and cerebrovascular diseases	16 (28.5%)
Endocrine system disease	11 (19.6%)
Digestive system disease	5 (8.9%)
Respiratory system disease	4 (7.1%)
Signs and symptoms at admission	
Fever	35 (62.5%)
Cough	23 (41.1%)
Shortness of breath	12 (21.4%)
Muscle pain	8 (14.2%)
Confusion	6 (10.7%)
Sore throat	5 (8.9%)
Anosmia	3 (5.3%)
Nausea and vomiting	3 (5.3%)
Asymptomatic	24 (42.8%)

Radiological and Laboratory Findings

Fifteen patients (78.9%) had bilateral and four patients (21.1%) had unilateral multifocal ground glass opacities (Figure 1). Radiological findings of thirty-seven patients (66.1%) were normal (Table 2).

Seventeen patients (30.3%) had lymphopenia and eight patients (14.2%) had leukopenia. In six (10.7%) patients, haemoglobin levels were below the normal limit. C-reactive protein (CRP) levels were above normal limits in thirty five patients (62.5%). Twenty five patients had impaired hepatic function. Aspartate aminotransferase (AST) and alanine aminotransferase (ALT) levels were elevated in sixteen (28.5%) and nine (16.1%) patients, respectively. Seven patients (12.5%) was suffering from renal dysfunction and urea and creatinine values were found elevated. Laboratory findings were found within limits in twenty four patients (42.8%). When looking at blood groups,

there were seventeen patients (30.3%) in group A, twenty-two patients (39.4%) in group B, ten patients (18.2%) in group O, and seven patients (12.1%) in group AB. Rh factor was positive in forty-seven (83.9%) patients and negative in nine (16.1%) patients (Table 2).

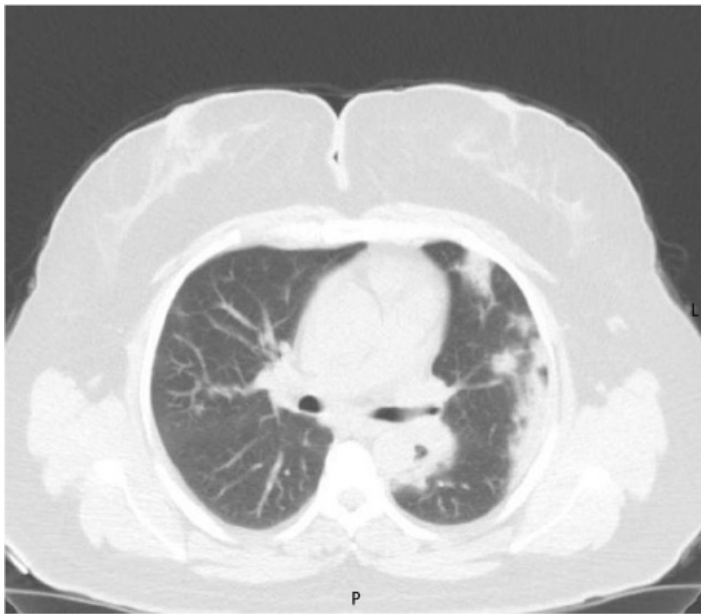


Figure 1. Chest CT, Multiple mottling and ground-glass opacity

Table 2. Radiologic and Laboratory Findings

Patients (n=56)	
Radiological findings	
Multiple mottling and ground-glass opacity	19 (33.9%)
Bilateral	15 (78.9%)
Unilateral	4 (21.1%)
No radiologic findings	37 (66.1%)
Blood biochemistry	
Decreased	
Lymphopenia	17 (30.3%)
Leukopenia	8 (14.2%)
Haemoglobin	6 (10.7%)
Increased	
C-reactive protein	35 (62.5%)
AST	16 (28.5%)
ALT	9 (16.1%)
Urea, Creatinine	7 (12.5%)
Laboratory findings are normal	23 (41.1%)
ABO and Rh blood groups	
A	17 (30.3%)
B	22 (39.4%)
O	10 (18.2%)
AB	7 (12.1%)
Rh Positive	47 (83.9%)
Rh Negative	9 (16.1%)

Treatment and Clinical Results

All patients were hospitalized and treated under isolation. Most patients were given antibiotic treatment, thirty eight patients (73.1%) were treated with a single antibiotic, while fourteen patients (26.9%) received a combination therapy. The first preferred antibiotics were with the active compound Azithromycin. Antibiotics in combined therapy generally included some common and atypical pathogens. Twenty patients (35.7%) received antiviral therapy with an active compound of Oseltamivir (75 mg every 12 hours orally). We used the drug with the active compound of hydroxychloroquine in forty five (80.3%) patients. Following the loading dose of 2x400 mg on the first day, we switched to maintenance therapy with 2x200 mg. Methylprednisolone treatment was also given to nine patients (16.1%). Oxygen therapy was applied to sixteen patients (28.5%) (Table 3).

The length of hospital stay ranged from 4 to 22 days. The mean duration of hospital stay was 12.3 days. Forty one patients (73.2%) admitted to the service recovered and were discharged. One patient developed diabetic ketoacidosis and one patient developed sepsis and they were taken to the intensive care unit where their treatment continued. None of the patients received mechanical ventilation. Later, one of the patients in the intensive care unit recovered and was discharged. So far, there has been no death from Covid-19 in our hospital (Table 3).

Table 3. Treatments and Clinical Outcomes

Patients (n=56)	
Treatments	
Antibiotic treatment	52 (92.8%)
Oseltamivir	20 (35.7%)
Hydroxychloroquine	45 (80.3%)
Oxygen therapy	16 (28.5%)
Glucocorticoids	9 (16.1%)
Mechanical ventilation	0 (0%)
Clinical Outcomes	
Discharged	41 (73.2%)
Remained in hospital	15 (26.8%)
Died	0 (0%)
Mean duration of hospital stay (day)	12.3

Discussion

This study was conducted in Antalya Serik State Hospital, Turkey on patients diagnosed with Covid-19 and is a descriptive study investigating the demographic and clinical characteristics of patients. Coronavirus comprises a large family of viruses commonly found in humans, as well as in animals (camels, bats, etc.). There are seven different species of coronavirus [6]. The epidemic was thought to be related to the market place that sold live animals in Wuhan and was later closed as a source of the disease. However, it has been observed that in Covid-19 the disease has spread from person to person, as in MERS-CoV and SARSCoV. In our study, thirty nine of the 56 patients with

Covid-19 were living in Serik. Fourteen patients were patients who were not settled here and came to visit. Three patients had been released from prison. Six patients were married. Nine patients was a hotel employee. Five patients had a history of contact with a relative living abroad.

The exact incubation period for Covid-19 is unknown. In a study including 21 patients with mild symptoms, viral RNA was not detected in nasopharyngeal swab samples 10 days after the onset of symptoms [7]. The World Health Organization also reported in its status report published on February 19 that the mean incubation period was four to five days but it may extend up to 14 days, and most cases was observed within the first 5 days after first contact [8]. We quarantined our cases for at least 14 days and started treatment. The length of hospital stay ranged from four to 22 days. The mean duration was 12.3 days. Although Covid-19 affects all age groups, it tends to cause more serious complications in the middle-aged and elderly population or those with underlying chronic diseases. In China, 87% of cases were seen between the ages of 30 and 79 [9]. Studies have shown that the mean age of Covid-19 patients varies between 49 and 56 years of age [10]. The data on the age distribution of Covid-19 cases in Turkey has not yet been obtained, however, in our study, thirty patients were male and twenty-six were female, and the mean age was 41.3 years (6 month-89 years). Ten patients was younger than 18 years, fifteen patients were between the ages of 19-39, eight patients were between 40-49 years, six patients were between 50-59 years, thirteen patients was between 60-69 years and four patients were either 70 years or older. Symptomatic infection in children is rare and is usually mild when it occurs. In our study, there was ten patients aged 18 and under and the symptoms were very mild.

Mean height of these patients was 163.5 cm and average weight was 70.4 kg. Mean body mass index of the patients was 25.88 and was evaluated as marginally overweight. We could not find any study in the literature regarding the relation between height, weight, and body mass index. There was no remarkable difference in our study. However, we had a small number of cases to confirm a statistical difference.

None of our patients were medical personnel. 3.8% of Covid-19 cases in China were healthcare professionals [11]. 601 of the cases diagnosed so far in Turkey (3.8%), were healthcare professionals. Moreover, infection rates in males is higher than in females [12]. In our study, thirty patients were male. In China, 85% of the patients declared that they never smoked [13]. In our study, thirty four patients never smoked.

The severity of the disease has been shown to be associated with comorbid diseases [14]. In a study conducted in China, the fatality rate was 10.5% in cardiovascular diseases, 7.3% in diabetes, 6.3% in chronic respiratory diseases, 6.0% in hypertension and 5.6% in cancer cases [11]. Twenty five of our patients had chronic disease. Cardiovascular and cerebrovascular disease in sixteen patients, endocrine system disease in eleven patients, respiratory system disease in four patients and digestive system diseases in five patients were present.

Although symptoms range from mild to severe, pneumonia is the

most common serious sign of infection [15]. In a study of patients with Covid-19 pneumonia in Wuhan, the most common clinical findings at the onset of the disease were fever in 88%, fatigue in 38%, dry cough in 67%, myalgia in 14.9% and respiratory distress in 18.7% [16]. In our study, the most common complaints were fever and cough followed by shortness of breath. The most common clinical symptoms in our study were fever in thirty five patients, cough in twenty three patients and shortness of breath in twelve patients. WHO described the most common symptoms as fever, fatigue and a dry cough. In addition, shortness of breath, myalgia, sore throat and in very few people, diarrhoea was reported, however, there is no specific clinical finding that can distinguish Covid-19 from other viral respiratory infections. Many studies have identified asymptomatic infections, but their frequency is not clear [17]. In our study, twenty four patients were asymptomatic. Moreover, olfactory and taste disorders have been reported in patients with Covid-19. In a study conducted in Italy, olfactory or taste disorders were reported in 34% and both olfactory and taste disorders were reported in 19% of patients [18]. In our study, olfactory disorder was reported in only three patients.

Variations in hemogram tests of patients diagnosed with Covid-19 are observed. Leukopenia in 34%, lymphopenia in 83% and thrombocytopenia in 36% of the patients, were reported in one study, but often lymphopenia has been reported to develop [19]. Among our cases, seventeen patients had lymphopenia and eight patients had leukopenia. We also observed lymphopenia more frequently, but thrombocytopenia was not observed. In addition, haemoglobin levels were detected below the normal limit in six patients. Biochemistry results revealed elevations in CRP, AST, ALT, and renal function parameters, as previously reported [20]. In our study, CRP was above the normal limits in thirty five patients. Twenty five patients had hepatic dysfunction, sixteen patients had elevated AST levels and nine patients had elevated ALT levels. Seven patients had renal dysfunction and urea and creatinine levels were found to be elevated. Therefore, our results were parallel with the literature. When looking at blood groups, there were seventeen patients (30.3%) in group A, twenty-two patients (39.4%) in group B, ten patients (18.2%) in group O, and seven patients (12.1%) in group AB. Rhesus factor was positive in forty-seven (83.9%) patients and negative in nine (16.1%) patients. We did not detect any studies in the literature on blood types.

In radiological imaging, chest radiographs were found to be normal in early stage or mild cases and computed tomography was more sensitive in these cases. In patients with Covid-19, multifocal ground-glass opacity, mostly compatible with viral pneumonia, was observed [21]. In our study, fifteen patients had bilateral and four patients had unilateral multifocal ground-glass opacities. Radiologists and pulmonologists reported high specificity of CT in the diagnosis of Covid-19 [22]. CT was also used as a diagnostic tool in our clinic.

The Covid-19 Rapid Antibody Test detects IgG and IgM antibodies against human SARS-CoV-2 qualitatively in whole blood, serum and plasma samples. It is used for rapid screening of symptomatic or asymptomatic SARS-CoV-2 patients in hospitals and clinics. In our clinic, we performed this test in thirty eight

of the 56 PCR-positive patients and the test gave positive results in seventeen patients (44.7%) and negative results in twenty one patients (55.3%). There is no definitive evidence for the use of these kits to test Covid-19 suspected cases [23].

No specific treatment is recommended for Covid-19 and no vaccine was available at the time of preparation of this manuscript [24]. In the literature, it was reported that 58% of the Covid-19 patients received antibiotics, 38% of the patients received oseltamivir, 18% of the patients received corticosteroids, while 41% of the patients had oxygen therapy and 5% of the patients were treated in the intensive care unit [13]. In our clinic, thirty eight patients were treated with a single antibiotic, while fourteen patients received combination therapy. The first preferred antibiotic group was the Azithromycin group antibiotics. Antibiotics in combined therapy were generally against some common and atypical pathogens. Twenty patients received antiviral therapy with Oseltamivir active compound. We used the drug with hydroxychloroquine in 45 patients in our clinic. Following the loading dose on the first day, we switched to maintenance therapy. Nine patients were also given methylprednisolone therapy. Oxygen therapy was performed on sixteen patients. Two patients were treated in the intensive care unit. No patient ever had a mechanical ventilator.

The Covid-19 outbreak continues with its global effects, which are not fully known yet. A number of pandemic-related measures have been taken in the world as well as in Turkey. The Covid-19 infection has often been shown to affect more middle-aged and older people with comorbidity. The patients generally admitted with a complaint of fever and cough. Radiologically, many patients had typical involvement in the lungs as multifocal ground-glass opacity. Currently, there is no standard treatment or vaccine available for Covid-19. Larger studies are needed to fully control the Covid-19 pandemic and to plan the diagnosis and treatment of patients. We had few cases to reveal a statistical difference. Our results were found to be parallel with a few studies present in literature.

Conflict of interests

The authors have no conflicts of interest to declare.

Financial Disclosure

All authors declare no financial support.

Ethical approval

The study protocol has approved from local ethic committee

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