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A Case Series of Patients with COVID-19 Infection Admitted to a Secondary Care Center in Turkey

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Abstract

Introduction: COVID-19 is a zoonotic viral infection that first emerged in Wuhan, China, the source of which is thought to be a seafood market, and then spread rapidly from China to the world.

Objective: The aim of this observational study was to analyze cases with COVID-19 admitted to a single secondary care center in Turkey.

Methods: This is a descriptive study performed during the period from March 22 to 30, 2020, in Kars Harakani State Hospital, Kars, Turkey. We evaluated all patients with reverse transcription polymerase chain reaction (RT-PCR) to confirm COVID-19. Demographic characteristics, clinical signs and symptoms, comorbidities, blood tests results, chest computed tomography (CT) scan findings and outcomes including hospitalization, intensive care unit (ICU) admission and survival of the patients were recorded.

Results: During the one week study period, we took 435 nasopharyngeal swabs from suspicious cases and found 22 patients (4 females, 18 males) whose COVID-19 infection was confirmed via RT-PCR. Their ages ranged from 18 to 86 years, with an average of 45.59±25.02. Ten (45%) of the cases were current smokers. The body temperature of the cases ranged from 36.1 to 38.4 ^{o}C, with an average of 36.78 ± 0.65. Four cases were asymptomatic and the most common complaint was cough (82%). Hypertension (23%) and chronic obstructive pulmonary disease (COPD) (23%) were the most common coexisting diseases. In chest CT scan, ground glass densities were detected in 7 (32%) patients and infiltration was observed in 8 (36.3%). The mortality rate of the cases was 9% (n=2).

Conclusion: The most common complaint of patients was cough. Hypertension and COPD were the most prevalent comorbidities among patients.

Key words: Case Series; COVID-19; Turkey

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INTRODUCTION

COVID-19 is a zoonotic viral infection that first emerged in Wuhan, China, the source of which is thought to be a seafood market, and then spread rapidly from China to the world [1, 2]. The clinical spectrum of COVID-19 ranges from asymptomatic cases to severe viral pneumonia, acute respiratory distress syndrome and death [2, 3]. The first positive case of COVID-19 in Turkey was announced on March 11, 2020 and the patient had travelled to Europe. The statistics regarding COVID-19 patients in Turkey until April 15, 2020 are as follows: total number of tests performed 443,626; number of positive cases 65,111; number of deaths 1,403; number of cases admitted to intensive care unit (ICU) 1,809; number of intubated patients 1,087; number of cases recovered from the disease 4,799 [4]. Here, we present the clinical characteristics of patients with confirmed COVID-19, who were diagnosed and treated in a secondary care center in Turkey.

Methods

This descriptive study was performed during the period from March 22 to 30, 2020, in Kars Harakani State Hospital, Kars, Turkey. the standard protocol of th ehospital, which was used for evaluating the patients is as follows: The body temperature of all patients admitted to the emergency department (ED) is first measured in triage. Patients with complaints of fever, cough or sputum are considered as suspected patients for COVID-19. Suspected patients are taken to the isolation room in the ED by the triage nurse. Suspected patients are re-evaluated by the doctor and the following items are assessed: a) either of the signs or symptoms including fever or lower respiratory

disease findings (cough, sputum) are present, b) the clinical picture cannot be explained by another disease, c) his/her relatives or himself/herself have travelled abroad within 14 days before the onset of symptoms, d) he/she has been in close contact with a confirmed case of COVID-19 within 14 days before the onset of symptoms. The criteria for identifying those who are At risk of developing COVID-19: a) health workers providing care without using proper protective equipment for COVID-19, b) people sharing the same class, room, office, hotel with COVID-19 patients, c) those shaking hands with the patients, c) people who remain face to face with the cases for more than 15 minutes in less than one meter distance, d) people who have travelled with the COVID-19 patient on the same plane (two people in the front, two in the back, two on the right and two on the left).

We evaluated all patients using reverse transcription polymerase chain reaction (RT-PCR) to confirm COVID-19 infection. For this purpose, a nasopharyngeal swab sample was taken from those identified as suspected cases by the doctor and chest computed tomography (CT) scan was planned according to the clinical findings. Demographic characteristics, clinical signs and symptoms, comorbidities, blood tests results, chest CT scan findings and outcomes including hospitalization, intensive care unit (ICU) admission and survival of the patients were recorded. Cases were numbered as C1 (case 1)-C22 (case 22) from 1 to 22.

Results

During the one week study period, we took 435 nasopharyngeal swab samples from suspected cases and we evaluated the 22 patients whose COVID-19 infection was confirmed via RT-PCR in the hospital. Four of the patients were female (18%) and 18 were male (82%). The age of the patients ranged from 18 to 86 years, with an average of 45.59±25.02. One of the patients had returned from Mecca, Saudi Arabia and this case was the only case with international contact among our patients (C12). One patient was pregnant (C2).10 (45%) of the cases were current smokers, 6 (27.5%) were non-smokers and 6 were ex-smokers (27.5%). Cases 8-10 were living in the same house. None of the patients stayed in the nursing home or were homeless. The body temperature of the cases ranged from 36.1 to 38.4°C, with an average of 36.78 ± 0.65. The respiratory rate of the patients ranged between 16 and 30 per minute with an average of 20.18 ± 3.54. The systolic blood pressure of cases varied between 100 and 140 mmHg, with an average of

Table 1: Clinical symptoms and signs of the study patients

Case No.	Asymptomatic	Cough	Fever	Dyspnea	Sputum	Malaise	Sore throat	Nasal congestion	Nausea	Diarrhea	Altered mental status
C1	-	+	-	+	-	-	-	-	-	-	-
C2	-	+	+	-	-	-	-	-	-	-	-
C3	-	+	-	+	-	-	-	-	-	-	-
C4	-	+	+	-	-	-	+	-	-	-	-
C5	-	+	-	-	-	-	-	+	-	-	-
C6	-	+	-	-	-	-	-	-	-	-	-
C7	-	+	-	-	-	-	-	-	-	-	-
C8	-	+	-	+	+	-	+	-	-	-	-
C9	+	-	-	-	-	-	-	-	-	-	-
C10	+	-	-	-	-	-	-	-	-	-	-
C11	+	-	-	-	-	-	-	-	-	-	-
C12	-	+	+	+	-	-	-	-	-	-	-
C13	-	+	-	-	-	-	+	-	-	-	-
C14	-	+	-	+	+	+	-	-	-	-	-
C15	-	+	-	+	-	-	-	-	-	-	-
C16	-	+	+	+	-	-	-	-	-	-	-
C17	+	-	-	-	-	-	-	-	-	-	-
C18	-	+	-	-	-	-	-	-	-	-	-
C19	-	+	-	-	-	-	+	-	+	-	-
C20	-	+	-	-	-	-	+	-	-	-	-
C21	-	+	-	-	-	-	-	-	-	-	-
C22	-	+	-	+	-	+	-	-	-	-	-

114.09 ± 10.98. The heart rate of the cases varied between 68 and 120 per minute, with an average of 87.36 ± 12.92. The oxygen saturation of the cases ranged between 80% and 98% in room air, with an average of 91.72±5.61. Clinical symptoms and signs of patients are given in table 1. Four cases were asymptomatic and the most common complaint was cough (82%). Comorbidities of the patients are given in table 2. Hypertension (23%) and chronic obstructive pulmonary disease (COPD) (23%) were the most common coexisting diseases among patients, followed by coronary artery disease (CAD) (18%), congestive heart failure (CHF) (18%), diabetes mellitus (DM) (9%), asthma (4.5%) and neoplastic disease including chronic lymphocytic leukemia (CLL) (4.5%). Blood test results of patients including renal functions (urea, creatinine), liver tests (alanine aminotransferase (ALT), aspartate aminotransferase (AST), total bilirubine, sodium, glucose, c-reactive protein (CRP) and complete blood counts (white blood cell (WBC), neutrophil, hemoglobine, platelets) are demonstrated in table 3. Chest CT findings and outcomes of the cases are presented in table 4. Only one patient had pleural effusion (C13). Ground glass densities were detected in 7 (32%) patients

Table 2: Comorbidities of the study patients

Case No.	Hypertension	Diabetes mellitus	Hodgkin lymphoma	Coronary artery disease	Chronic obstructive pulmonary disease	Asthma	Neoplastic disease	Chronic liver disease	Congestive heart failure	Cardiovascular disease	Chronic renal disease
C1	-	-	-	-	-	+	-	-	+	-	-
C2	-	-	-	-	-	-	-	-	-	-	-
C3	-	-	-	+	-	-	+	-	-	-	-
C4	-	-	-	-	-	-	-	-	-	-	-
C5	-	-	-	-	-	-	-	-	-	-	-
C6	-	-	-	-	-	-	-	-	-	-	-
C7	-	-	-	-	-	-	-	-	-	-	-
C8	+	-	-	+	-	-	-	-	-	-	-
C9	-	-	-	-	-	-	-	-	-	-	-
C10	-	-	-	-	-	-	-	-	-	-	-
C11	-	-	-	-	-	-	-	-	-	-	-
C12	+	-	-	-	+	-	-	-	-	-	-
C13	+	+	-	-	+	-	-	-	-	-	-
C14	+	-	-	+	+	-	-	-	+	-	-
C15	-	-	-	-	+	-	-	-	-	-	-
C16	-	-	-	-	-	-	-	-	-	-	-
C17	-	-	-	-	-	-	-	-	-	-	-
C18	+	+	-	-	+	-	-	-	+	-	-
C19	-	-	-	-	-	-	-	-	-	-	-
C20	-	-	-	-	-	-	-	-	-	-	-
C21	-	-	-	-	-	-	-	-	-	-	-
C22	+	-	-	+	+	-	-	-	+	-	-

Table 3: Blood test results of study patients (n=22)

Blood test	Minimum	Maximum	Mean±SD
Urea, mg/dL	10	86	35.65±17.99
Creatinine, mg/dL	0.47	1.60	0.99±0.26
Aspartate aminotransferase, U/L	10.7	137	30.17±27.84
Alanine aminotransferase, U/L	8.90	81.10	22.55±17.76
Total bilirubin, mg/dL	0.21	2.79	0.84±0.57
Sodium, mmol/L	132	142	138.45±2.63
Glucose, mg/dL	79.4	251	106.01±35.9
C-reactive protein, mg/L	1	87.12	16.49±23.22
White blood cell, 10*3/uL	5.25	14.81	9.46±2.84
Hemoglobin, g/dL	9	17.6	14.52±2.40
Neutrophil, 10*3/uL	2.54	11.70	6.54±2.78
Platelet, 10*3/uL	30	339	215.5±66.99

Table 4: Chest computed tomography scan findings and outcomes of the study patients

Case No.	Chest CT findings										Outcome		
	Pleural effusion	Infiltration	Right lung upper lobe	Right lung middle lobe	Right lung lower lobe	Left lung upper lobe	Left lung lower lobe	Left lung lingula	Consolidation	Ground glass densities	Hospitalization	ICU admission	Exitus
C1	-	+	-	-	+	-	-	-	-	+	+	-	-
C2	-	-	-	-	-	-	-	-	-	-	+	-	-
C3	-	+	-	+	+	-	-	-	+	+	-	+	+
C4	-	-	-	-	-	-	-	-	-	-	+	-	-
C5	-	-	-	-	-	-	-	-	-	-	+	-	-
C6	-	-	-	-	-	-	-	-	-	-	+	-	-
C7	-	-	-	-	-	-	-	-	-	-	+	-	-
C8	-	+	-	+	+	-	-	-	+	+	+	-	-
C9	-	-	-	-	-	-	-	-	-	-	+	-	-
C10	-	-	-	-	-	-	-	-	-	-	+	-	-
C11	-	-	-	-	-	-	-	-	-	-	+	-	-
C12	-	+	+	+	+	+	+	+	+	+	+	-	-
C13	+	+	-	-	-	-	-	+	-	+	+	-	-
C14	-	+	-	-	-	-	-	+	+	-	+	-	-
C15	-	-	-	-	-	-	-	-	-	-	+	-	-
C16	-	+	+	+	-	-	-	-	-	+	+	-	-
C17	-	-	-	-	-	-	-	-	-	-	+	-	-
C18	-	-	-	-	-	-	-	-	-	-	+	-	-
C19	-	-	-	-	-	-	-	-	-	-	+	-	-
C20	-	-	-	-	-	-	-	-	-	-	+	-	-
C21	-	-	-	-	-	-	-	-	-	-	+	-	-
C22	-	+	-	-	-	-	-	+	-	+	+	-	+

ICU: intensive care unit

and infiltration was observed in 8 (36.3%). Only one patient (C3) was admitted to the ICU and the others were hospitalized. The mortality rate of the cases was 9% (n=2). One patient died suddenly during hospitalization (C22) and the only patient admitted to ICU died on the fifth day (C3). This patient (C3) who died in ICU had thrombocytopenia and CLL.

Discussion

All 22 patients in this case series were diagnosed in a secondary care center and the majority of them had moderate COVID-19. In the study, our patients were generally middle-aged (45.59±25.02) men (82%). The fact that middle-aged men are more active in working life may be the most important reason for rapid transmission/the higher prevalence of COVID-19 among them. The curfew for citizens over 65 years in Turkey may be another reason for the low average age. Turkey has stopped flights to China on February 3, to Iran on February 23, to Iraq, Italy and South Korea on February 29, 2020. Minister of Health of the Republic of Turkey has announced the first COVID-19 patient on March 11, 2020. On March 13, Turkey also stopped flights to Europe. These preventive measures were taken to reduce contamination from abroad. Our unique patient/One of our patients had been to Mecca, Saudi Arabia for umrah and he was the only patient who had cross-border contact among our cases. The Kingdom of Saudi Arabia has declared the first COVID-19 patient on March 2, 2020. Taking precautions to prevent contact with countries where COVID-19 spread rapidly resulted in delayed emergence of this disease in Turkey.

Smoking was common among our patients (45%). Cigarette smoke and its contents may cause impairment of mucociliary clearance in the respiratory epithelium, peribronchiolar inflammation and fibrosis, and increased mucosal permeability. Smoking can also repress protection of respiratory epithelium, alveolar macrophages, dendritic cells and adaptive immune mechanisms; and as a result, smoking precipitates to lower respiratory infections [5, 6].

The most prevalent symptoms of COVID-19 were fever, cough, fatigue, sputum, shortness of breath, sore throat and headache, respectively [7]. However, the most common symptom among our patients was cough (82%). The mean fever/body temperature of the patients was not high (36.78 ± 0.65) and the highest temperature measured was

38°C. Mean systolic blood pressure (114.09±10.98), heart rate (87.36 ± 12.92) and oxygen saturation (91.72±5.61) indicated that patients were hemodynamically stable at the time of admission to the hospital. Comorbidity is a risk factor for COVID-19, which also increases the severity and mortality of the disease [8, 9]. We found that the most common chronic disease among our patients was hypertension, which was in line with the literature, but COPD was as common as hypertension. In COVID-19 patients, ground glass opacities and consolidations are the main characteristics of chest tomography and our results were also similar to the these findings [10, 11].

Conclusions

The majority of our patients were middle-aged men. Cough was a more common symptom than fever. hypertension and COPD were the most common comorbidities among patients with COVID-19.

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Authors' contribution

All the authors met the standards of authorship based on the recommendations of the International Committee of Medical Journal Editors.

Conflict of interest

None declared.

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