



The Clinical Characteristics of Patients Applied to Covid-19 Outpatient Clinics of a Tertiary Hospital in Turkey in the First Wave of Pandemic

Kaya SD^{1*}, Karaagac AS², Ocal GA³, Kaya B³, Sahin S³, Aktas SC³, Coban MT³, Oznur Ak³, Onguru P³ and Batirel A³

¹University of Health Sciences Kartal Koşuyolu Research and Training Hospital, Infectious Diseases and Clinical Microbiology, Istanbul, Turkey

²University of Health Sciences Kartal Koşuyolu Research and Training Hospital, Pediatrics, Istanbul, Turkey

³University of Health Sciences Kartal Dr. Lütfi Kırdar City Hospital Infectious Diseases and Clinical Microbiology, Istanbul, Turkey

*Corresponding author: Kaya SD, Kartal Koşuyolu Research and Training Hospital, Denizler Cad, Cevizli Kavşagi, No:2, Kartal/Istanbul, Turkey; sibeldogankaya@yahoo.com

Received date: 11 April 2021; Accepted date: 14 April 2021; Published date: 18 April 2021

Citation: Kaya SD, Karaagac AS, Ocal GA, Kaya B, Sahin S, Aktas SC, et al. (2021). The Clinical Characteristics of Patients Applied to Covid-19 Outpatient Clinics of a Tertiary Hospital in Turkey in the First Wave of Pandemic. SunText Rev Med Clin Res 2(2): 128.

DOI: <https://doi.org/10.51737/2766-4813.2021.028>

Copyright: © 2021 Kaya SD, et al., This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Abstract

Background: The first wave of COVID-19 pandemic began to spread in Turkey in March 2020. As one of the first pandemic hospitals, very intense patient admissions have been made to our outpatient clinics in this period. For better understanding the disease characteristics, we investigated the clinical findings, comorbidities, and radiological pulmonary involvement of the COVID-19 patients.

Methods: The SARS-CoV-2 RT-PCR test results of 6966 patients, applied to Kartal Lutfi Kırdar City Hospital Infectious Diseases and Clinical Microbiology COVID-19 outpatient clinics between March and June 2020, were analyzed retrospectively. Demographic, clinical, and thoracic computed tomography data of the patients with positive test results were evaluated.

Results: 2672(38.4%) patients were SARS-CoV-2 RT-PCR positive (1465 males, 1207 females). The mean age of the patients with a definite diagnosis of COVID-19 was 40.4±14.5 years (12-94 years). There was a statistically significant relationship between the age and COVID-19 (75.3% were >65 years, p<0.001). The main clinical findings were fever (n:2437, 91.2%), cough (n:2013, 75.3%), dyspnea (n:809, 30.2%), sore throat (n:257, 9.6%), weakness (n:244, 9.1%), myalgia (n:228, 8.5%), nausea/vomiting (n:135, 5.1%), diarrhea (n:80, 3%), anosmia (n:54, 2%), and loss of taste (n:54, 2%). The comorbidities found in our COVID-19 patients were hypertension(HT) (n:94, 3.5%), diabetes mellitus(DM) (n:70, 2.6%), chronic obstructive pulmonary disease(COPD) (n:68, 2.5%), coronary artery disease(CAD) (n:32, 1.2%) and malignancy (n:16, 0.6%). 4113 patients (75.2%), out of 5484 patients who had thorax CT, had COVID-19 compatible radiological involvement, with 3315(80.6%) positive and 798(19.4%) negative SARS-CoV-2 RT-PCR test results.

Conclusion: The most frequent symptoms in the patients admitted to our hospital in the first wave of pandemic were fever, cough, dyspnea, sore throat, and weakness. Despite lockdown, the elderly above 65 years were most affected. The

rate of COVID-19 compliant radiological involvement was moderately high. The most common comorbidities were HT, DM, COPD, CAD and malignancy.

Keywords: Multiple daily insulin injection (MDI); Xultophy; Type 2 Diabetes Mellitus (T2DM; Bio-psycho-social; Glucagon like peptide-1 receptor agonist (GLP-1RA)

Introduction

Coronavirus is a single-stranded enveloped RNA virus with helical nucleocapsid and positive polarity, which can yield infection in humans and animals. In the Nidovirales family, together with Toroviruses, they form Coronaviridea [1]. The World Health Organization (WHO) first announced that the cause of the pandemic was the new type of Coronavirus (2019-nCoV) on January 12, 2020, and on February 11, 2020, this new virus was named SARS-CoV-2. The polymerase chain reaction (PCR) of respiratory samples is used to show the agent [1,2]. For the early diagnosis and treatment of COVID-19, it is important to determine the clinical findings and to understand the clinical course well. Therefore, the present study aimed to evaluate the symptoms, clinical findings, comorbidities, and radiological pulmonary involvement of the COVID-19 patients.

Patients and Methods

In this study, the SARS-CoV-2 RT-PCR test results of 6966 probable COVID patients, performed via reverse transcription-polymerase chain reaction of the respiratory samples obtained subsequently from their nasopharyngeal and or pharyngeal swabs in the University of Health Sciences, Kartal Dr. Lutfi Kırdar City Hospital Infectious Diseases and Clinical Microbiology COVID-19 outpatient clinics between March and June 2020, were analysed retrospectively. Of these patients, 2672 (38.4%) were positive (1465 males (54.8%) and 1207 females (45.2%)). Their demographic and clinical data and thorax CT findings were obtained from the hospital's electronic data system. COVID-19 probable or definite case classifications were arranged by the Ministry of Health guidelines valid at the time of admission to the hospital. The cases, having at least one of the signs and symptoms of fever, sore throat, cough, loss of taste or smell, myalgia, and keeping in close contact with a confirmed COVID-19 patient within 14 days before the onset of these symptoms, were accepted as "probable cases". Besides, those whose SARS-CoV-2 RT-PCR tests were positive were recorded as "definite cases"(3). In thoracic CT, the most discriminating features for COVID-19 pneumonia included a peripheral distribution, ground-glass opacity, and vascular thickening. Ground glass density less than 3 cm in three or fewer foci was interpreted as "mild pneumonia"; consolidation or more than three foci or ground glass density greater than 3 cm as "moderate pneumonia"; all lobes involved in both lungs and at least three lesions larger than 3 cm as "severe

pneumonia" [3,4]. Approvals for the study were obtained from the Ministry of Health and the Kartal Lutfi Kırdar City Hospital Ethics Committee. Written consents of the patients were received. Statistical analysis: Frequency tables were used for categorical variables, and descriptive statistics (mean, median, standard deviation, etc.) were used for numerical variables. Group comparisons of categorical variables were analysed with cross-table statistics (Chi-square tests). Analyses were made with non-parametric statistical methods under the assumption that numerical variables are not normally distributed. In group comparisons, Mann Whitney U test was used for 2 groups. The risk study for COVID-19 was calculated with the logistic regression model, and those with a p-value of <0.05 were considered statistically significant.

Results

A 2672(38.4%) of 6966 patients, applied to the COVID-19 outpatient clinics, were SARS-CoV-2 RT-PCR positive. 1465 of them were males (54.8%) and 1207 were females (45.2%). Although COVID-19 PCR positivity was more common in males, there was no statistically significant difference with respect to gender (p>0.05) (Table 1).

Table 1: COVID-19 positivity rates according to the gender.

Gender	COVID-19 PCR positivity					
	Negative		Positive		Total	
	(n)	%	(n)	%	(n)	%
Male	2551	(%63.5)	1465	(%36.5)	4016	(%100)
Female	1743	(%59.1)	1207	(%40.9)	2950	(%100)
Total	4294	(%61.6)	2672	(%38.4)	6966	(%100)
p value>0.05						

The mean age of the patients with a definite diagnosis of COVID-19 was 40.4 ± 14.5 years (12-94 years). When the age groups were compared with respect to the COVID-19 PCR positivity, patients over 65 years of age, 182 out of 365 patients (49.9%), had the highest, and the 25-35- year-old group had the lowest ratio, 689 out of 2002 (34.4%). When compared statistically, there was a significant difference between the COVID-19 positivity of the cases above and below 65 years of age (p<0.001) (Table 2,3).

The main clinical findings in order of frequency were fever (n:2437, 91.2%), cough (n:2013, 75.3%), dyspnea (n:809, 30.2%), sore throat (n:257, 9.6%), weakness (n:244, 9.1%), myalgia (n:228, 8.5%), nausea and vomiting (n:135, 5.1%),

diarrhea (n:80, 3%), anosmia (n:54, 2%), and loss of taste (n:54, 2%). 280 (10.5%). The most common accompanying diseases among the COVID-19 patients were hypertension (HT) (n:94, 3.5%), diabetes mellitus (DM) (n:70, 2.6%), chronic obstructive pulmonary disease (COPD) (n:68, 2.5%), coronary artery disease (CAD) (n:32, 1.2%) and malignancy (n:16, 0.6%) (Table 4).

Table 2: Distribution of the COVID-19 patients according to the age groups.

Age groups	Negative (n) %	Positive (n) %	Total (n) %
<=18	54 (56.8%)	41 (43.2%)	95 (100%)
18-25	553 (63.6%)	316 (36.4%)	869 (100%)
25-35	1313 (65.6%)	689 (34.4%)	2002 (100%)
35-45	1127 (62.1%)	688 (37.9%)	1815 (100%)
45-55	686 (58.2%)	492 (41.8%)	1178 (100%)
55-65	378 (58.9%)	264 (41.1%)	642 (100%)
>=65	183 (50.1%)	182 (49.9%)	365 (100%)
Total	4294 (61.6%)	2672 (38.4%)	6966 (100%)

Table 3: COVID-19 positivity rates above and below 65 years old.

Age	COVID-19 PCR test result		
	Negative	Positive	Total
<65 years	4111 (62.3%)	2490 (37.7%)	6601(100%)
≥65 years	183 (50.1%)	182 (49.9%)	365 (100%)
Toplam	4294 (61.6%)	2672 (38.4%)	6966 (100%)

p<0.001
p value>0.05 was accepted as statistically significant

Table 4: Accompanying diseases of the COVID-19 patients.

Accompanying Disease		COVID-19 PCR		
		Negative (n:4294)	Positive (n:2672)	Total (n:6966)
Hypertension	No	4194 (97.7%)	2578 (96.5%)	6772 (97.2%)
	Yes	100 (2.3%)	94 (3.5%)	194 (2.8%)
Diabetes Mellitus	No	4223 (98.3%)	2602 (97.4%)	6825 (98.0%)
	Yes	71 (1.7%)	70 (2.6%)	141 (2.0%)
ChronicObstructive Pulmonary Disease	No	4166 (97.0%)	2604 (97.5%)	6770 (97.2%)
	Yes	128 (3.0%)	68 (2.5%)	196 (2.8%)
CoronaryArtery Disease	No	4262 (99.3%)	2640 (98.8%)	6902 (99.1%)
	Yes	32 (0.7%)	32 (1.2%)	64 (0.9%)
Malignancy	No	4268 (99.4%)	2656 (99.4%)	6924 (99.4%)
	Yes	26 (0.6%)	16 (0.6%)	42 (0.6%)

Thorax CT without contrast material was performed on 5484 of 6966 patients (78.7%), who had the symptoms of cough, fever, dyspnea, sore throat, and weakness, on the admission day. Out of 4113 (75.2%) patients with COVID-19 compatible radiological involvement, 3315(80.6%) had positive and 798(19.4%) had negative SARS-CoV-2 RT-PCR test results. The ratio of radiological involvement in males was similar to that of females

(50.9% vs 49.1%, respectively). Most of these patients had mild to moderate pneumonia. When compared according to the age groups, the most common rate of lung involvement was between the ages of 35-45 years. The most common symptoms in the patients with radiological pulmonary involvement were cough (43.9%), dyspnea (24.3%), and fever (14.3%) and the most

common accompanying disease was hypertension (6.8%) (Table 5).

Table 5: Complaints of the patients with COVID-19 compliant thorax CT findings.

Complaints	(n) %
Cough	651 (%43,9)
Dyspnea	360 (%24,3)
Fever	212 (%14,3)
Fatigue	205 (%13,8)
Sore throat	178 (%12,0)
Back ache	115 (%7,8)
Myalgia	110 (%7,4)
Nausea-vomiting	86 (%5,8)
Diarrhea	71 (%4,8)
Loss of taste	37 (%2,5)
Anosmia	35 (%2,4)

Discussion

Fever, dry cough, and dyspnoea were the most common initial symptoms of the patients with COVID-19 in our patient admissions. Less common symptoms include headache, anosmia, cough with sputum production, joint pains, chills, nausea, vomiting, and diarrhoea. Similarly, Guan et al. reported fever, cough, sputum, shortness of breath, and gastrointestinal symptoms (diarrhoea, nausea, etc.) as the most common symptoms of COVID-19 [2].

The disease caused by SARS-CoV-2 can range from mild to critically ill. Male gender and comorbidities such as cardiovascular disease, diabetes mellitus, hypertension, chronic kidney disease, obesity, and chronic lung disease are associated with the development of severe disease. The case fatality rate ranges from 2.3% to 14.8% depending on the demographic characteristics of the country or region, age, disease severity, and comorbidities [4,5]. Although the number of our admitted male patients and their COVID positivity rates were higher than those of females, there was no statistically significant relationship. The most common accompanying diseases of our COVID-19 patients were hypertension (3.5%), diabetes mellitus (2.6%), chronic obstructive pulmonary disease (2.5%), coronary artery disease (1.2%), and malignancy (0.6%). However, we were not able to have enough information about the progress of these patients, because they were being followed by the family practitioners during their quarantine period. Older adults are more susceptible to COVID-19 and are at significantly increased risk for morbidity and mortality. With age, pre-existing additional conditions make older adults more likely to develop a serious infection [6,7]. As the Republic of Turkey has legally been applying periodic restrictions depending on the number of cases and our patients

over the age of 65 and below the age of 18 were lockdown during the study period, the elderly and the young children in the present study were not high in number. Despite the limited number, the COVID positivity rate of the patients over 65 years of age was significantly higher than those below 65 years. Older adults often manifest some atypical symptoms, such as sore throat, delirium, and unexplained hypoxia, tachycardia, or tachypnea [5]. Wu et al reported that the most common co-morbidities in COVID-19 patients were hypertension (27%), diabetes (19%), and cardiovascular disease (6%) [7,8]. In the present study, hypertension was the first, and diabetes mellitus was the second most common accompanying disease among COVID-19 patients. The high frequency of hypertension among COVID-19 cases is not entirely surprising and should not be inferred that there is a causal relationship between hypertension and COVID-19 or its severity, as hypertension appears particularly in older people. Diabetes mellitus is also one of the most common chronic diseases, with severe cerebrovascular and micro vascular complications, throughout the world. Infections, especially influenza pneumonia, are frequently seen in elderly patients with type 2 DM [9,10]. The immune compromised state of some cancer patients (whether caused by the disease itself or by treatment) increases the risk of infection compared to the general population. Immunosuppression can expose cancer patients to serious complications from an infection, resulting in delayed treatment and unnecessary hospitalizations that can negatively affect the prognosis of the disease [11]. It has been found that patients who received chemotherapy or had surgery in the 30 days before presenting with COVID-19 had a higher risk of severe events than patients who were not treated with chemotherapy or surgery [11,12]. In our study, 16 (0.6%) of 2672 COVID-19 patients had a history of malignancy. These patients were successfully followed in special isolated rooms in the oncology department of our hospital. In a study from China, it was reported that the radiological findings of COVID-19 were present in 56%-98% of the SARS-CoV-2 RT-PCR positive patients [4]. Relevantly, 80.6% of the patients in the present study were PCR positive and had radiological involvement compatible with COVID-19. The most common symptoms in these patients were cough, dyspnea, and fever. The most common comorbidities were HT, COPD, DM, CAD, and malignancy. Limitations of our study were as follows: Since it was a single-center study of a tertiary hospital, the number of cases was limited and we couldn't get enough information about the progress of the patients because family physicians did their follow up during their quarantine period.

Acknowledgment

None

Funding

None

Conflict of Interest

None

References

1. Lauer SA, Grantz KH, Bi Q, Jones FK, Zheng Q, Meredith HR, et al. The incubation period of coronavirus disease 2019 (COVID-19) from publicly reported confirmed cases: estimation and application. *Ann Intern Med.* 2020; 172: 577-582.
2. Guan WJ, Ni ZY, Hu Y, Liang WH, Ou CQ, He JX, et al. Clinical characteristics of corona virus disease 2019 in China. *N Engl J Med.* 2020: 1-13.
3. Republic of Turkey Ministry of Health. COVID-19 (SARS-CoV-2 Infection) general information, epidemiology and diagnosis, Ankara: public health general management 2020.
4. Bai HX, Hsieh B, Xiong Z, Halsey K, Choi JW, Tran TML, et al. Performance of radiologists in differentiating COVID-19 from viral pneumonia on chest CT. *Radiol.* 2020; 296: 46-54.
5. Williams R, Karuranga S, Malanda B, Saeedi P, Basit A, Besancon S, et al. Global, and regional estimates and projections of diabetes-related health expenditure: results from the International Diabetes Federation Diabetes Atlas. *Diabetes Res Clin Pract.* 2020; 162: 1-6.
6. Jonathan PS, Samkeliso B, Tess H, Cook DG, Critchley JC. Diabetes, and infection: assessing the association with glycaemic control in population-based studies. *Lancet Diabetes Endocrinol.* 2016; 4: 148-158.
7. Zhou F, Yu T, Du R, Fan G, Liu Y, Liu Z, et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *Lancet.* 2020; 395: 497-506.
8. Wu Z, Mc Googan JM. Characteristics of and important lessons from the Corona virus disease 2019 (COVID-19) outbreak in China: summary of a report of 72,314 cases from the Chinese center for disease control and prevention. *JAMA.* 2020; 323: 1239-1242.
9. Chen T, Wu D, Chen H, Yan W, Yang D, Chen G, et al. Clinical characteristics of 113 deceased patients with coronavirus disease 2019: retrospective study. *BMJ.* 2020
10. Donald HI, Nitsch D, Millett ERC, Sinclair A, Thomas SL. New estimates of the burden of acute community-acquired infections among older people with diabetes mellitus: a retrospective cohort study using linked electronic health records. *Diabet Med.* 2014; 31: 606-614.
11. Liang W, Guan W, Chen R, Wang W, Li J, Xu R, et al. Cancer patients in SARS-CoV-2 infection: a nationwide analysis in China. *Lancet Oncol.* 2020; 21: 335-337.
12. Wang D, Hu B, Hu C. Clinical characteristics of 138 hospitalized patients with 2019 novel Corona virus-infected pneumonia in Wuhan, China. *JAMA.* 2020; 323: 1061-1069.