

Epidemiological characteristics of Covid-19 patients in XXX province, in XXX

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Abstract

Abstract Aim: This study's aim was to evaluate the epidemiological characteristics of COVID-19 patients and risk factors affecting mortality. **Methods:** This cross-sectional study included 1003 patients whose PCR (Polymerase Chain Reaction) test were positive for SARS-CoV-2 in XXX province until July 2020. **Results:** Of the patients evaluated, 88% were adults and 12% of them were children (<18 years old). While 24.2% of all patients, and 40.8% of the patients under the age of 18 were asymptomatic. The most common symptoms in adults were fatigue (47.9%), myalgia (44.7%), loss of smell and taste (32.4%), and the symptoms in children were fever (37.5%), fatigue (12.5%) and myalgia (11.7%). Pneumonia was observed in 35.4% of COVID-19 patients. Pneumonia was associated with advanced age, lack of BCG vaccination, presence of additional disease, hypertension, diabetes mellitus, cardiovascular, respiratory and kidney disease. Overall case-fatality rate was 2.6 percent. The mean age of the patients who died was 76.5 years. The mortality rate in patients over 65 years of age was found to be %11.5. In multivariate analysis, presence of nephrological disease, neurological disease, cardiovascular disease, cigarette exposure, dyspnea, loss of smell and taste, presence of diabetes mellitus, being over 65 years of age, number of drugs used and income status were found to be determinative factors. **Conclusion:** We found that the independent risk factors for COVID-19 mortality included older age, history of neurological, nephrological, or cardiovascular disease, smoking, and dyspnea symptom. In addition, we found patients with disturbed smell and taste had a better prognosis. Knowing the determinants of mortality can help clinicians to predict patients' prognosis at an earlier stage. **Keywords:** COVID 19; epidemiology; pneumonia; mortality

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Running Title: Epidemiological Features Of Covid-19 Patients

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in patients over 65 years of age was found to be %11.5. In multivariate analysis, presence of nephrological disease, neurological disease, cardiovascular disease, cigarette exposure, dyspnea, loss of smell and taste, presence of diabetes mellitus, being over 65 years of age, number of drugs used and income status were found to be determinative factors.

Conclusion: We found that the independent risk factors for COVID-19 mortality included older age, history of neurological, nephrological, or cardiovascular disease, smoking, and dyspnea symptom. In addition, we found patients with disturbed smell and taste had a better prognosis. Knowing the determinants of mortality can help clinicians to predict patients' prognosis at an earlier stage.

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What's known

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1. Covid-19 is a great threat to human health.
2. In Covid-19 infection, patients had a tendency to progress rapidly to pneumonia while initially presenting with upper respiratory tract disease.
3. Covid-19 prognosis was observed to be worse in patients with comorbidities

What's new

1. The clinical COVID-19 presentations are different in adults and children.
2. The independent risk factors for COVID-19 mortality included older age, history of neurological, nephrological, or cardiovascular disease, smoking, and shortness of breath symptom.
3. The patients with disturbed smell and taste had a better prognosis.

Introduction

After the first case occurred on December 2019, in the Hubei province of China, coronavirus disease (COVID-19) continued to spread all over the world with over 17.6 million confirmed cases.¹ XXX has occurred the first case on March 10, 2020 and from that date on COVID-19 disease began to be observed throughout the country. Due to the government's interventions and control measures (closure of schools, determination of a treatment strategy, curfews for risky age groups, reduction of the number of active workers in business life, *etc.*.) and changes in personal behavior (wearing masks and obeying social distance rules), the number of confirmed and suspicious cases in our country has begun to decrease.

Although the first cases in China were found to have contact history with local seafood and wild animal markets in Wuhan, it was found that the virus was transmitted from person to person by droplets or direct contact.^{2,3} Typical symptoms in symptomatic patients are fever, cough, dyspnea, weakness, sore throat, and myalgia. It was observed that patients initially had symptoms of upper respiratory tract disease but had a tendency to progress rapidly to pneumonia.⁴

It has been stated that the prognosis of Covid-19 disease is worse in patients with comorbidity.⁵ This situation carries great importance in the frequency of comorbidity, prognostic importance in age groups, case detection and establishment of hospital admission protocols. There are limited number of studies on COVID-19 epidemiology in our country. The aim of the present study was to contribute to the literature on the epidemiology and clinical features COVID-19 disease.

Material and Methods

First of all, necessary permissions were obtained from local ethics committee (2020/10-03). The first case was observed on 20.03.2020. It was planned to include all Polymerase Chain Reaction (PCR)- positive SARS-CoV-2 cases in nasopharyngeal / oropharyngeal samples monitored in XXX from the 20.03.2020 to 06.07.2020. Those, whose current symptoms and treatment continued were excluded from the study. Between these dates, 1099 cases were followed up in XXX province. The study was conducted with 1003 patients, excluding patients whose data about symptoms or treatment were still inaccessible.

All patients included in the study were contacted by phone, and in adult patients, age, gender, education level, marital status, income status, occupation, comorbidities, drug use, BCG vaccination status, smoking, alcohol abuse, admission symptoms, general symptoms, incubation period, treatment. process and recovery time were questioned. The age limit for pediatric patients was determined as under 18 years old. Age, gender, presence of BCG vaccination, postnatal history, smoking exposure, presentation symptoms, general symptoms and recovery time were questioned. If available thoracic computed tomography (CT) results of all patients were examined.

Statistical analysis

Statistical analysis was performed using SPSS version 21.0 (IBM®, Chicago, USA) package program. The conformity of the variables to the normal distribution was examined using visual (histogram and probability charts) and analytical methods (Shapiro-Wilk test). Descriptive statistics were expressed as mean and standard deviation in normally distributed numerical data, median and minimum-maximum range in those not showing normal distribution, numbers and percentages in nominal data. Normally distributed numerical variables between two groups were analyzed with the Independent Groups T test, and numerical variables that did not show normal distribution between two groups. were analyzed using the Mann-Whitney U test Nominal data between two groups were evaluated using Pearson Chi-square test or Fisher's Exact test. Binary Logistic Regression analysis was used in the analysis of determinant factors on mortality in multivariate analysis. In the statistical analyzes, comparisons with a p value of less than 0.05 were considered statistically significant.

Results

A total of 1099 cases were followed up between 20.03.2020 and 06.07.2020, in XXX. The graph of the date-case number is shown in **figure 1** .

A total of 1003 cases were included in the analysis. 12% of 1003 patients were under 18 years old. The sociodemographic characteristics of the patients examined in our study are shown in **table 1** .

The 25.3% (n = 253) of all cases were asymptomatic. 76.9% (n = 679) of adult patients, and 59.2% (n = 71) of patients under 18 years old were symptomatic. The incidence of symptomatic Covid-19 disease was higher in adults (p <0.001). The most common symptoms in adults were fatigue (47.9%), myalgia (44.7%) and loss of smell and taste (32.4%). The most common symptoms observed in patients under 18 years old were fever (37.5%), fatigue (12.5%) and myalgia (11.7%).

The first symptoms observed were fatigue (19%), fever (18.8%) and myalgia (14.8%) in adults, while fever (31.7%) and cough (9.2%) under 18 years old. Weakness, myalgia, loss of smell and taste, cough, headache, diarrhea, anorexia and shortness of breath were more common in adults, while fever was more frequently observed in patients under 18 years old. The median recovery time for symptoms was 5 days (1-45 days), but the median recovery time for odor-taste disturbance was 10 days (1-105 days) (**Table 2**).

Adult smoker patients were more symptomatic than non-smokers (p = 0.001). However, among those with and without symptoms, any difference was not detected as for age (p = 0.282), gender (p = 0.100), marital status (p = 0.227), periods of education (p = 0.070), monthly income (p = 0.706), alcohol abuse (p = 0.704), BCG vaccination (p = 0.995) and the presence of additional disease (p = 0.441).

It was observed that symptomatic patients under 18 years old were relatively older than those without symptoms (p <0.001). However, gender, family monthly income, duration of breastfeeding, BCG vaccination

status and presence of comorbidity were not found to be associated with and without symptoms ($p > 0.05$). Smoking exposure tended to be higher in those with symptoms, but was not considered significant ($p = 0.063$) (**Table 3**).

Six hundred and sixty-one patients were evaluated with thorax CT. 53.8% ($n = 356$) the patients with thorax CT were compatible with COVID-19 pneumonia, 12.3% ($n = 81$) the patients were not compatible, 33.8% ($n = 224$) of the patients were within normal limits their thorax CTs.

The most frequently observed findings in thorax CT were two-sided (40.7%), or one-sided (9.7%) ground glass appearance, and consolidation (14.2%) followed by nodular lesion(s) (4.5%), lymphadenopathy (3.6%) and pleural effusion (2.9%). The frequency of pneumonia in adults was significantly higher than under 18 years old (38.7% vs 11.7%, $p < 0.001$).

The patients with pneumonia were older than without pneumonia ($p < 0.001$). In the patients who received BCG vaccine was lower the frequency of pneumonia ($p = 0.001$). Pneumonia was observed more frequently in patients with comorbidities ($p < 0.001$) and smokers. Fatigue ($p < 0.001$), myalgia ($p = 0.043$), fever ($p = 0.002$), cough ($p < 0.001$), anorexia ($p < 0.001$), shortness of breath ($p < 0.001$), nausea-vomiting ($p = 0.023$) symptoms were observed more frequently in the patients with pneumonia. The recovery time for symptoms was longer in patients with pneumonia ($p = 0.005$) (**Table 4**).

Treatment with an anticoagulant ($p < 0.001$), oral antidiabetic ($p = 0.007$), alpha-beta blocker ($p < 0.001$), diuretic ($p = 0.003$), angiotensin converting enzyme inhibitor (ACEI) ($p < 0.001$), calcium channel blocker (CCB) ($p = 0.021$), and anti-lipidemic ($p = 0.016$) was more frequently detected in patients with pneumonia diagnosed on thorax CT results. Twenty-six patients (2.6%) exited. The deceased patients were older than the survivors ($p < 0.001$), and their economic income was lower ($p = 0.018$). Presence of BCG vaccination was lower in patients who died ($p < 0.001$). The frequency of comorbidity was higher in patients who exited ($p < 0.001$). Hypertension ($p < 0.001$), diabetes mellitus ($p = 0.007$), lung diseases ($p < 0.001$), cardiovascular diseases ($p < 0.001$), neurological diseases ($p < 0.001$) and renal diseases ($p < 0.001$) were more frequently seen among comorbid diseases. These patients received pharmacological treatments more frequently ($p = 0.020$) (**Table 5**).

The determinants of mortality in COVID-19 patients were evaluated with the Binary Logistic Regression analysis. Factors associated in univariate analyzes for pneumonia and mortality ($p < 0.02$) were included in the regression model. The number of pharmacological drugs used in the treatment of chronic diseases were not included in the analyzes. Chronic kidney disease (odds ratio (OR), 54.321; 95% confidence intervals (95% CI, 16.891-428.224), being over the age of 65 (OR, 12.179; 95% CI, 2.921-50.781), neurological disease (OR, 9.231; 95% CI, 1.610-52.929), cardiovascular disease (OR, 5.171; 95% CI, 1.267-21.097), smoking (OR, 3.697; 95% CI, 1.100-12.426), dyspnea (OR, 3.469; 95% CI, 1.011-11.901) and loss of smell and taste (OR, 0.095; 95% CI, 0.015-0.600) were identified as the determinants of mortality among COVID-19 patients. The results of the multivariable analysis are summarized in **table 6**.

Discussion

COVID-19 virus is more contagious in the early phase, and therefore diagnosing people with specific symptoms is essential for the management of the disease.^{6,7} In this study, the most frequent symptoms observed in adults were fatigue (47.9%), myalgia (44.7%), loss of smell and taste (32.4%), on the other hand the most common symptoms in children were fever (37.5%), cough (15%) and fatigue (12.5%). A systematic review and meta-analysis of 148 studies from 9 countries reported that the most prevalent symptoms were fever (78%), cough (57%), and fatigue (31%).⁸ In children, it has been reported that the most common symptoms were cough (43.4%), fever (43.1%), and sore throat (20.4%).⁹

Several studies have indicated that the disease affects children differently than adults.¹⁰ Various reasons have been reported for the different severity and manifestations of COVID-19 among children, including low outdoor activities, less traveling, more innate immune response, lower exposure to smoke.^{10,11} Among different presentations of the disease, the asymptomatic infection has a crucial outcome as it can facilitate

the spread of the disease in the community. In our study, 24.2% of all patients and 40.8% of patients under 18 years of age were asymptomatic. Although asymptomatic infection could be detected at every age, it was more frequent with younger ages. Dong et al. reported that 94.1% of pediatric patients (under 18 years old) could be asymptomatic or could have mild or moderate disease.¹² However, Wu et al. stated that 1% of 72,314 cases were asymptomatic in China.¹³ In our study, asymptomatic infection was associated with the absence of smoking in adults and younger age in children.

Although the majority of infected patients are asymptomatic, most of the serious symptomatic COVID-19 cases were presented with pneumonia in symptomatic cases. In our research, pneumonia was detected in approximately half of COVID-19 cases confirmed by RT-PCR, and it was associated with advanced age, lack of BCG vaccine, presence of additional diseases, such as hypertension, diabetes mellitus, cardiovascular, respiratory, and kidney disease. Fatigue, myalgia, fever, loss of smell and taste, cough were the most common symptoms in the present study. Among these symptoms, fatigue, myalgia, fever, cough, shortness of breath, anorexia, nausea, and vomiting were more common in COVID-19 patients that are presented with pneumonia than those without pneumonia. Comorbidities, including hypertension, cardiovascular diseases, diabetes, chronic lung disease, active smoking and older age, have previously been associated with poor prognosis in COVID-19 patients.^{14,15,16,17} The lower incidence of COVID-19 in countries with routine BCG vaccination programs indicates that BCG may have a protective effect against COVID-19.¹⁸ It is claimed that non-specific reactions at the cellular level to infections induced by BCG have a non-specific protective role against the viruses.¹⁹ The cellular and molecular mechanisms of the protective effects of BCG vaccination against various RNA and DNA viruses have been studied in mice recently.²⁰ Several studies state that BCG vaccination reduces the risk of upper respiratory tract infection and pneumonia in elderly people.^{21,22} Ozdemir et al stated that the mean of deaths per population ratio is found to be significantly lower in BCG-vaccinated countries compared to non-vaccinated countries.²³

The overall case-fatality rate was 6.3 according to the WHO situation report as of April 13, 2020.²⁴ However, a significant difference in mortality rates was also noted between countries (0.81% in Russia and 15.23% in France).²⁵ Mortality rates are observed to be higher in countries with older-aged populations. COVID-19 related deaths increased at advanced age, has been observed in China, United States, Italy, Korea, and Malaysia.^{26,27,28,29,30} The overall case-fatality rate was 2.6% in the present study. No deaths occurred in the group aged 54 years and younger age, but cases in those aged 65 years and older had an 11.5% case-fatality rate. The odds ratio for mortality increased in patients over 65 years of age (OR:12.1, 95% CI, 2.9-50.7).

In multivariate analysis, odds ratio of overall mortality in patients with COVID-19 was higher in patients with neurological (OR:9.2, 95%CI 1.5-52.9), nephrological (OR:54.3, 95% CI, 6.8-428.2) or cardiovascular disease (OR:5.1, 95% CI 1.2-21.0). Moreover, the mortality was increased in patients with smoking exposure and shortness of breath. Interestingly, the mortality was reduced in patients with loss of smell and taste in our study.

ACE2 and TMPRSS2, two protein receptors that are required for host cell entry and facilitate replication of COVID-19, are expressed in the neurons of the olfactory neuro-epithelium, having a potential role for the loss of smell in COVID-19 patients.³¹ Loss of smell and taste or anosmia is considered a significant marker for COVID-19. Although it is common, it has not been studied in detail, regarding its relationship with the disease prognosis. Our analysis indicated that anosmia is an indicator of a good prognosis. Similarly, Talavera et al. evaluated 576 patients with COVID-19 retrospectively and reported that patients with anosmia had a lower mortality rate and better prognosis.³² Several studies stated that the presence of anosmia appeared at the early stages of the disease, patients with olfactory and gustatory dysfunction were younger, having a different inflammatory response.^{32,33,34}

Numerous studies have previously reported that comorbidities such as cerebrovascular disease, cardiovascular and chronic kidney disease were associated with higher mortality in COVID-19.³⁵ In this study, in addition to these results, we similarly observed that nephrological pathologies significantly increase the risk of mortality. Previous studies mentioned that the kidneys is among the target organs of SARS-CoV-2.³⁶ Autopsies of SARS-CoV-2 confirmed patients demonstrated the presence of the virus in tubular epithelial

cells.³⁷ Moreover, ACE2 is present in kidneys with the highest activity, and it is implicated in reducing tubular and glomerular damage.³⁸ It is understood that our study have several limitations. For example, because of the nature of retrospective study, the correct identification and diagnosis of symptoms reported by the patients were the main limitations.

Conclusion

The clinical COVID-19 presentations are different in adults and children. The case-fatality rate was lower in our study compared to other countries. In this study, we found that the independent risk factors for COVID-19 mortality included older age, history of neurological, nephrological, or cardiovascular disease, smoking, and shortness of breath symptom. These results can help clinicians to identify patients with poor prognosis at an earlier stage. In addition, in this study, we found that patients with disturbed smell and taste had a better prognosis.

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Declaration of interest: We declare no competing interests.

Funding: The authors have no funding to declare.

Informed consent : All subjects gave informed consent for participation

Table 1. Sociodemographic characteristics of the participants

Characteristics			Value
Age(years)	Total	Median (min-max)	42 (0,3-96)
	>80	N (%)	47 (4,7)
	70-79	N (%)	62 (6,2)
	60-69	N (%)	120 (12,0)
	50-59	N (%)	161 (16,1)
	40-49	N (%)	148 (14,8)
	30-39	N (%)	177 (17,6)
	18-29	N (%)	168 (16,7)
	<18	N (%)	120 (12,0)
		N (%)	
Sex	Female		537 (53,5)
	Male		466 (46,5)
Marital Status		N (%)	
	Married		714 (71,2)
	Single		289 (28,8)
Education time (years)		Median (min-max)	5 (0-22)
Monthly income		N (%)	
	[?] 2500 TL		583 (58,1)
	> 2500 TL		420 (41,9)
Alcohol (+)		N (%)	10 (1,0)
Smoking exposure (+)		N (%)	328 (32,7)
BCG vaccine (+)		N (%)	731 (72,9)
Comorbidity (+)		N (%)	343 (34,2)

Table 2. Distribution of general symptoms and first admission symptoms of all COVID-19 patients

Symptoms	All cases (N=1003)	Adults (N=883)	Children (N=120)	p value
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All symptoms	N (%)	N (%)	N (%)	
Fatigue	438 (43.7)	423 (47.9)	15 (12.5)	<0.001 ⁺
Myalgia	409 (40.8)	395 (44.7)	14 (11.7)	<0.001 ⁺
Fever	298 (29.7)	253 (28.7)	45 (37.5)	0.047 ⁺
Loss of smell and taste	296 (29.5)	286 (32.4)	10 (8.3)	<0.001 ⁺
Cough	274 (27.3)	256 (29)	18 (15)	0.001 ⁺
Headache	162 (16.2)	153 (17.3)	9 (7.5)	0.006 ⁺
Diarrhea	136 (13.6)	127 (14.4)	9 (7.5)	0.039 ⁺
Anorexia	129 (12.9)	127 (14.4)	2 (1.7)	<0.001 ⁺
Dyspnea	126 (12.6)	120 (13.6)	6 (5)	0.008 ⁺
Throatache	115 (11.5)	107 (12.1)	8 (6.7)	0.079 ⁺
Nausea and vomiting	73 (7.3)	69 (7.8)	4 (3.3)	0.076 ⁺
Runny nose	50 (5)	48 (5.4)	2 (1.7)	0.076 ⁺
Stuffy nose	44 (4.4)	39 (4.4)	5 (4.2)	0.900 ⁺
Sputum	39 (3.9)	39 (4.4)	0	0.010 ⁺⁺
Dizziness	23 (2.3)	22 (2.5)	1 (0.8)	0.509 ⁺⁺
Abdominal pain	7 (0.7)	5 (0.6)	2 (1.7)	0.200 ⁺⁺
First symptoms				
Fever	204 (20.3)	166 (18.8)	38 (31.7)	0.004 ⁺
Fatigue	172 (17.1)	168 (19)	4 (3.3)	<0.001 ⁺
Myalgia	134 (13.4)	131 (14.8)	3 (2.5)	<0.001 ⁺
Cough	127 (12.7)	116 (13.1)	11 (9.2)	0.144 ⁺
Loss of smell and taste	65 (6.5)	62 (7)	3 (2.5)	0.043 ⁺
Headache	65 (6.5)	62 (7)	3 (2.5)	0.043 ⁺
Throatache	64 (6.4)	60 (6.8)	4 (3.3)	0.110 ⁺
Dyspnea	29 (2.9)	27 (3.1)	2 (1.7)	0.568 ⁺⁺
Diarrhea	23 (2.3)	20 (2.3)	3 (2.5)	1.000 ⁺⁺
Runny nose	21 (2.1)	17 (1.9)	4 (3.3)	0.327 ⁺⁺
Back pain	11 (1.1)	11 (1.2)	0	
Nausea and vomiting	10 (1)	9 (1)	1 (0.8)	1.000 ⁺⁺

⁺ Chi-square test, ⁺⁺Fisher's Exact test

Table 3. Distribution of adult and pediatric patients by sociodemographic characteristics and presence of symptoms

Characteristics for adult patients				Total	Semptom (+) (N=679)	Semptom (+) (N=679)	Semptom (-) (N=204)	Semptom (-) (N=204)	p
Age	Total	Med (min-max) N (%)	Med (min-max) N (%)	47.2 (18-96)	46.8 (18-96)	46.8 (18-96)	48.4 (18-96)	48.4 (18-96)	0.2
	>80			47 (5.3)	34 (72.3)	34 (72.3)	13 (27.7)	13 (27.7)	
	70-79			62 (7)	45 (72.5)	45 (72.5)	17 (27.5)	17 (27.5)	
	60-69			120 (13.6)	85 (70.8)	85 (70.8)	35 (29.2)	35 (29.2)	
	50-59			161 (18.2)	131 (81.3)	131 (81.3)	30 (18.7)	30 (18.7)	

				40-49	148 (16.8)	115 (77.7)	115 (77.7)	33 (22.3)	33 (22.3)	
				30-39	177 (20)	138 (77.9)	138 (77.9)	39 (22.1)	39 (22.1)	
				18-29	168 (19)	131 (77.9)	131 (77.9)	37 (22.1)	37 (22.1)	
Sex		N (%)	N (%)							
				Female	473 (53.6)	374 (79)	374 (79)	99 (21)	99 (21)	
				Male	410 (46.4)	305 (74.3)	305 (74.3)	105 (25.7)	105 (25.7)	
Marital Status		N (%)	N (%)							
				Married	714 (80.9)	555 (77.7)	555 (77.7)	159 (22.3)	159 (22.3)	
				Single	169 (19.1)	124 (73.3)	124 (73.3)	45 (26.7)	45 (26.7)	
Education time		Med (min-max)	Med (min-max)		7.3 (0-22)	7.5 (0-22)	7.5 (0-22)	6.8 (0-22)	6.8 (0-22)	0.0
Monthly income		N (%)	N (%)							0.7
				[?] 2500 TL	518 (58.6)	396 (58.3)	396 (58.3)	122 (59.8)	122 (59.8)	
				> 2500 TL	365 (41.4)	283 (41.7)	283 (41.7)	82 (40.2)	82 (40.2)	
Alcohol (+)		N (%)	N (%)		10 (1.1)	7 (70)	7 (70)	3 (30)	3 (30)	0.7
Smoking (+)		N (%)	N (%)		328 (37,3)	232 (34,2)	232 (34,2)	96 (47,1)	96 (47,1)	0,0
BCG vaccine (+)		N (%)	N (%)		731 (82.8)	560 (82.6)	560 (82.6)	171 (23.4)	171 (23.4)	0.9
Comorbidity (+)		N (%)	N (%)		343 (39,1)	259 (38,4)	259 (38,4)	84 (41,4)	84 (41,4)	0,4
Characteristics for child patients			Total	Total	Total	Symptom (+) (N=71)	Symptom (+) (N=71)	Symptom (-) (N=49)	p	
Age	Total	Med (min-max)	9.2 (0.5-17)	9.2 (0.5-17)	9.2 (0.5-17)	10.9 (0.5-17)	10.9 (0.5-17)	6.7 (0.3-17)	<0	
Sex		N (%)	N (%)							0.7
				Male	64 (46.7)	64 (46.7)	37 (52.1)	37 (52.1)	27 (55.1)	
				Female	56 (53.3)	56 (53.3)	34 (47.9)	34 (47.9)	22 (44.9)	
Monthly income		N (%)								0.1

		[?] 2500 TL	65 (54.2)	65 (54.2)	65 (54.2)	42 (59.2)	42 (59.2)	23 (46.9)	
		> 2500 TL	55 (45.8)	55 (45.8)	55 (45.8)	29 (40.8)	29 (40.8)	26 (53.1)	
Breastfeeding time	Month	Med (min- max)	18 (0-30)	18 (0-30)	18 (0-30)	18 (0-30)	18 (0-30)	12 (0-30)	0.2
BCG vaccine (+)		N (%)	119 (99.2)	119 (99.2)	119 (99.2)	70 (98.6)	70 (98.6)	49 (100)	1.0
Comorbidity (+)		N (%)	10 (8.3)	10 (8.3)	10 (8.3)	6 (8.5)	6 (8.5)	4 (8.2)	1.0
Smoking expo- sure (+)		N (%)	33 (27.5)	33 (27.5)	33 (27.5)	24 (33.8)	24 (33.8)	9 (18.4)	0.0

⁺Mann Whitney U test, ⁺⁺Chi-square test

Table 4. Distribution of sociodemographic and clinical characteristics according to the presence of Covid-19 pneumonia in thorax computed tomography

Characteristics			Pneumonia (+) (n=356)	Pneumonia (-) (n=305)	p value
Age	Total	Med (min-max) N (%)	51.1 (2-96)	36.5 (1.5-87)	<0.001 ⁺
	<18		14 (29.2)	34 (70.8)	<0.001 ⁺
	18-64		252 (50)	252 (50)	<0.001 ⁺⁺
	>65		90 (82.6)	19 (17.4)	<0.001 ⁺⁺
Sex		N (%)			0.497 ⁺⁺
	Female		195 (54.8)	159 (52.1)	
	Male		161 (45.2)	146 (47.9)	
Monthly income		N (%)			0.058 ⁺⁺
	[?] 2500 TL		214 (60.1)	161 (52.8)	
	> 2500 TL		142 (39.9)	144 (47.2)	<0.001 ⁺⁺
BCG vaccine (+)		N (%)	263 (82.4)	246 (92.1)	0.001 ⁺⁺
Comorbidity (+)		N (%)	166 (48.7)	72 (26.8)	<0.001 ⁺⁺
Hypertension			83 (24.3)	24 (8.9)	<0.001 ⁺⁺
Diabetes mellitus			63 (18.5)	21 (7.8)	<0.001 ⁺⁺
Chronic lung diseases			35 (10.3)	15 (5.6)	0.036 ⁺⁺
Cardiovascular diseases			29 (8.5)	7 (2.6)	0.002 ⁺⁺
Nuerological diseases			16 (4.7)	14 (5.2)	0.771 ⁺⁺

Psychiatric diseases			13 (4.0)	1 (0.4)	0.145 ⁺⁺
Nephrological diseases			12 (3.5)	0	0.002 ⁺⁺
Others *			25 (7.0)	15 (4.9)	0.258 ⁺⁺
Smoking (+)		N (%)	130 (48.3)	93 (27.4)	<0.001 ⁺⁺
Symptoms		N (%)			
Fatigue			191 (53.7)	119 (39.0)	<0.001 ⁺⁺
Mialgia			168 (47.2)	120 (39.3)	0.043 ⁺⁺
Fever			132 (37.1)	78 (25.6)	0.002 ⁺⁺
Loss of smell and taste			112 (31,5)	99 (32,5)	0.784 ⁺⁺
Cough			130 (36.5)	66 (21.6)	<0.001 ⁺⁺
Headache			64 (18)	53 (17.4)	0.840 ⁺⁺
Diarrhea			51 (14.3)	45 (14.8)	0.876 ⁺⁺
Anorexia			67 (18.8)	27 (8.9)	<0.001 ⁺⁺
Dyspnea			70 (19.7)	17 (5.6)	<0.001 ⁺⁺
Throatache			42 (11.8)	39 (12.8)	0.699 ⁺⁺
Nause and vomiting			34 (9.6)	15 (4.9)	0.023 ⁺⁺
Runny nose			23 (6.5)	14 (4.6)	0.297 ⁺⁺
Stuffy nose			16 (4.5)	12 (3.9)	0.722 ⁺⁺
Sputum			21 (5.9)	9 (3)	0.069 ⁺⁺
Dizziness			11 (3.1)	6 (2.0)	0.363 ⁺⁺
Symptom disappearance time (day)	Symptom disappearance time (day)	Med (min-max)	8.3 (1-45)	6.1 (1-45)	0.005 ⁺

⁺ Mann Whitney U test, ⁺⁺ Chi-square test

* Dyslipidemia, rheumatological, thyroid, gastrointestinal diseases and malignancy

Table 5. Comparison of the surviving and non-surviving patients in terms of sociodemographic and clinical characteristics

Characteristics	Characteristics			Survivors (n=977)	Non-survivors (n=26)	p value
Age	Age	Total	Med (min-max)	41 (0,3-96)	76,5 (55-95)	<0.001 ⁺
Sex	Sex		N (%)			0.714 ⁺⁺
		Female		524 (53.6)	13 (50.0)	
		Male		453 (46.4)	13 (50.0)	
Marital status	Marital status		N (%)			0.126 ⁺⁺
		Married		692 (70.8)	22 (84.6)	
		Single		285 (29.2)	4 (15.4)	
Education time (year)	Education time (year)		Med (min-max)	5 (0-22)	0 (0-12)	<0.001 ⁺
Monthly income	Monthly income		N (%)			0.018 ⁺⁺
		[?] 2500 TL		562 (57.5)	21 (80.8)	

		> 2500 TL		415 (42.5)	5 (19.2)	
Alcohol (+)	Alcohol (+)		N (%)	9 (1.1)	1 (3.8)	0.260 ⁺⁺⁺
Smoking (+)	Smoking (+)		N (%)	318 (37.3)	10 (38.5)	0.902 ⁺⁺
BCG vaccine (+)	BCG vaccine (+)		N (%)	724 (87.7)	7 (53.8)	<0.001 ⁺⁺
Number of Comorbidities Comorbidity (+)	Number of Comorbidities Comorbidity (+)	Number of Comorbidities	Med (min-max)	1 (1-5)	2 (1-5)	<0.001 ⁺
Hypertension	Hypertension		N (%)	320 (37.6)	23 (88.5)	<0.001 ⁺⁺
Diabetes mellitus	Diabetes mellitus			144 (16.9)	12 (46.2)	0.001 ⁺⁺⁺
Chronic lung diseases	Chronic lung diseases			117 (13.7)	9 (34.6)	0.007 ⁺⁺⁺
Cardiovascular diseases	Cardiovascular diseases			58 (6.8)	8 (30.8)	<0.001 ⁺⁺⁺
Neurological diseases	Neurological diseases			50 (5.9)	9 (34.6)	<0.001 ⁺⁺
Psychiatric diseases	Psychiatric diseases			36 (4.2)	5 (19.2)	<0.001 ⁺⁺
Nephrological diseases	Nephrological diseases			25 (2.9)	2 (7.7)	0.189 ⁺⁺⁺
Others *	Others *			7 (0.8)	6 (23.1)	<0.001 ⁺⁺⁺
Number of drugs	Number of drugs	Number of drugs	Med (min-max)	60 (6.1)	3 (11.5)	0.220 ⁺⁺⁺
Pharmacological therapy (+)	Pharmacological therapy (+)	Pharmacological therapy (+)	N (%)	2 (0-10)	3 (1-8)	0.020 ⁺
Anticoagulant				264 (27.0)	17 (65.4)	<0.001 ⁺⁺
Oral antidiabetic				60 (7.5)	9 (42.9)	<0.001 ⁺⁺⁺
Alpha-beta blocker				80 (10.0)	6 (28.6)	0.016 ⁺⁺⁺
Diuretic				52 (6.5)	7 (33.3)	<0.001 ⁺⁺⁺
ACEI				49 (6.1)	7 (33.3)	<0.001 ⁺⁺⁺
ARB				50 (6.3)	6 (28.6)	0.002 ⁺⁺⁺
Inhaler				42 (5.3)	2 (9.5)	0.312 ⁺⁺⁺
CCB				41 (5.1)	3 (14.3)	0.096 ⁺⁺⁺
Anti-lipidemic				32 (4.0)	3 (14.3)	0.056 ⁺⁺⁺
Neurological medicine				27 (3.4)	1 (4.8)	0.520 ⁺⁺⁺
Others **				32 (4.0)	3 (14.3)	0.055 ⁺⁺⁺
Symptoms			N (%)	87 (8.9)	6 (23.1)	0.027 ⁺⁺⁺
Fatigue				427 (43.7)	11 (42.3)	0.887 ⁺⁺
Myalgia				400 (40.9)	9 (34.6)	0.517 ⁺⁺
Fever				291 (29.8)	7 (26.9)	0.753 ⁺⁺

Loss of smell and taste	294 (30.1)	2 (7.7)	0.013 ⁺⁺
Cough	265 (27.1)	9 (34.6)	0.398 ⁺⁺
Headache	160 (16.4)	2 (7.7)	0.414 ⁺⁺⁺
Diarrhea	135 (13.8)	1 (3.8)	0.240 ⁺⁺⁺
Anorexia	121 (12.4)	8 (30.8)	0.012 ⁺⁺⁺
Dyspnea	116 (11.9)	10 (3.5)	0.001 ⁺⁺⁺
Throatache	114 (11.7)	1 (3.8)	0.349 ⁺⁺⁺
Nause and vomiting	71 (7.3)	2 (7.7)	0.713 ⁺⁺⁺
Runny nose	50 (5.1)	0	0.636 ⁺⁺⁺
Stuffy nose	44 (4.5)	0	0.624 ⁺⁺⁺
Sputum	38 (3.9)	1 (3.8)	0.732 ⁺⁺⁺
Dizziness	23 (2.4)	0	0.543 ⁺⁺⁺

⁺ Mann Whitney U test; ⁺⁺ Chi-square test ; ⁺⁺⁺ Fisher's Exact Test

* Dyslipidemia, rheumatological, thyroid, gastrointestinal diseases and malignancy

**Proton pump inhibitor, thyroid, insulin, dialysis, immunosuppressant, cardiac therapy

(ACEI: Angiotensin Converting Enzym Inhibitor. ARB: Angiotensin Receptor Blockers. CCB: Calcium Channel Blocker)

Table 6. The determinants of mortality in patients with COVID 19

	B	OR	CI %95	P value
Nephrological diseases	3.995	54.321	6.891-428.224	<0.001
Age (over 65 years)	2.500	12.179	2.921-50.781	0.001
Neurological diseases	2.223	9.231	1.610-52.929	0.013
Cardiovascular diseases	1.643	5.171	1.267-21.097	0.022
Smoking	1.307	3.697	1.100-12.426	0.035
Dyspnea	1.244	3.469	1.011-11.901	0.048
Loss of smell and taste	-2.357	0.095	0.015-0.600	0.012
Diabetes Mellitus	1.098	2.999	0.774-11.624	0.112
Number of drugs	0.106	1.111	0.758-1.628	0.588
Monthly income	-0.331	0.718	0.161-3.196	0.664

*Binary logistic regression

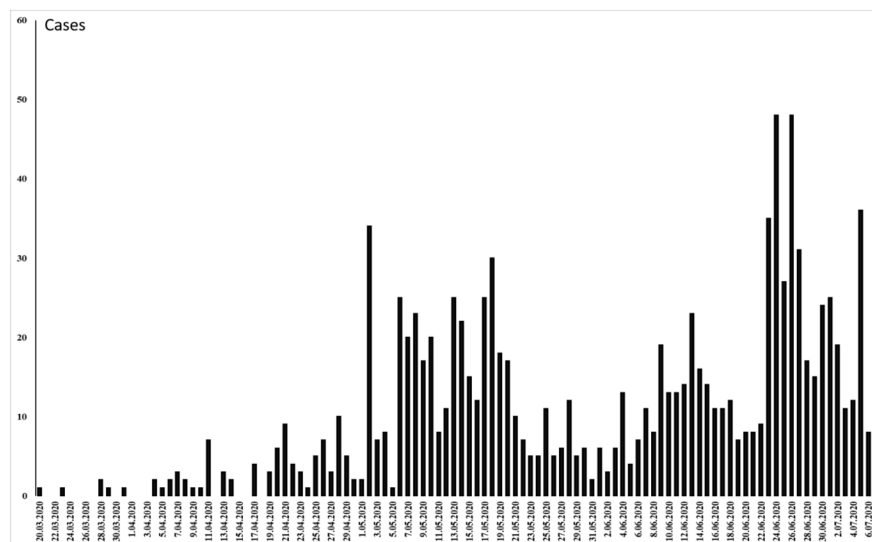


Figure 1: The number of Covid-19 cases by time in XXX Province.

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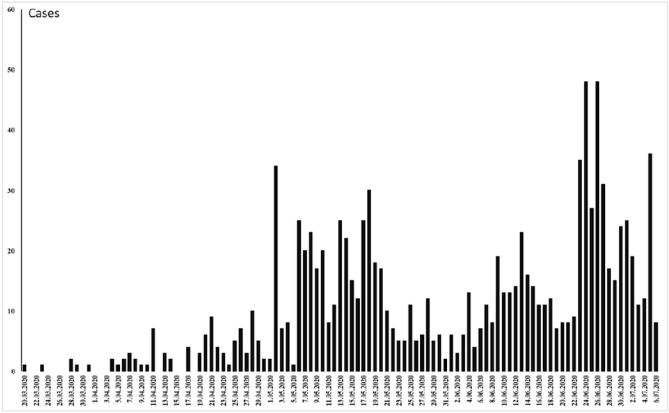


Figure 1: The number of Covid-19 cases by time in XXX Province.