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COVID-19 Patients Who Admitted to Pediatric Emergency Department

Çocuk Acil Servise Başvuran COVİD-19 Hastalar

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ABSTRACT

Objective: This study to evaluate SARS-CoV-2 PCR test-positive patients who were admitted to Pediatric Emergency Department, together with their admission symptoms and clinical, laboratory, and radiological findings.

Material and Methods: The study was conducted on patients admitted to the Pediatric Emergency Department between March 2020 and January 2021.

Results: A total of 1007 patients who tested positive for SARS-CoV-2 PCR were included in the study. Among these patients, 512 (50.8%) were female, 495 (49.2%) were male, and the median age was 171 months (range: 2-226). Disease classification revealed that 106 (10.5%) patients were asymptomatic.The most common symptoms were fever (45.6%), cough (38%), and sore throat (26.7%). In terms of age groups, fever (p<0.001) and vomiting and nausea (p=0.010) were significantly more prevalent in the group aged over 120 months. Chest X-rays were obtained for 73.4% of the patients, with 1.06% showing abnormal findings. The moderate group exhibited a higher incidence of abnormal chest X-ray findings compared to other clinical severity groups (p=0.010). CRP elevation was the most frequently observed laboratory finding, affecting 28.9% of patients, followed by leukopenia in 38.5% and lymphopenia in 25.2%. CRP, procalcitonin and troponin values were higher in the severe group (p=0.019; p=0.003, p=0.013). Inpatient treatment was administered to 10.3% of the patients.

Conclusion: Although coronavirus disease generally presents with asymptomatic or mild symptoms in children, it is important to be aware that rare cases may exhibit a severe course and even result in death. Detecting asymptomatic cases is crucial in terms of transmission control, especially to protect elderly individuals and adults with underlying diseases.

Key Words: Child, COVID-19, Pediatric emergency

ÖZ

Amaç: Bu çalışmada amaç Çocuk Acil Servise başvuran SARS-CoV-2 PCR testi pozitif olan hastaları başvuru semptomları, klinik, labaratuar ve radyolojik bulgularıyla birlikte değerlendirmek.

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Conflict of Interest / *Çıkar Çatışması*: On behalf of all authors, the corresponding author states that there is no conflict of interest.

Ethics Committee Approval / *Etik Kurul Onayı*: This study was conducted in accordance with the Helsinki Declaration Principles. Approval for the study was obtained from the Ankara Training and Research Hospital, Clinical Research Ethics Committee (date: June 30, 2021, number: 600/2021).

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Gereç ve Yöntemler: Çalışma üçüncü basamak Çocuk Acil Servise Mart 2020- Ocak 2021 tarihleri arasında başvuran hastalarda yapıldı. Verilerin analizinde SPSS 26 V kullanıldı.

Bulgular: Çalışmaya 1007 SARS-CoV-2 PCR pozitif hasta dahil edildi. Bunlardan 512 (%50.8)'si kız, 495 (%49.2)'i erkek cinsiyetteydi, yaş ortancası 171 ay (min-max:2-226)'di. Hastaların sınıflamasında 106 (%10.5) hasta asemptomatikti. En sık görülen semptom ateş (%45.6), öksürük (%38.3) ve boğaz ağrısıydı (%26.7). Yaş gruplarına göre bakıldığında 120 ay üstü grupta ateş (p<0.001), kusma ve ishal (p=0.010) anlamlı derecede yüksekti. Hastaların %74.3 üne akciğer grafisi çekildi, %1.06'sı anormal olarak değerlendirildi. Bu durum orta ağırlıktaki grupta daha çok görüldü (p=0.010). Sadece 20 (%1.9) hastaya bilgisayarlı tomografi çekildi, bununda 8 (%0.8) tanesi anormal olarak raporlandı. CRP yüksekliği hastaların %28.9'unda, lökopeni %38.5'unda, lenfopeni %25.2'sinde görülen en yaygın görülen laboratuar bulgularıydı. CRP, Prokalsitonin ve Troponin değerleri ağır grupta anlamlı olarak yüksekti (p=0.019; p=0.003, p=0.013). Hastaların %10.3 hastanede yatarak tedavi aldı.

Sonuç: Koronavirüs hastalığı çocuklarda her ne kadar asemptomatik ve hafif semptomlarla seyretse de komorbid hastalığı olan grupta ağır seyredebileceği ve ölümlerin görülebileceği, asemptomatiklerin bulaş açısından tespitinin özellikle yaşlı ve altta yatan hastalığı olan erişkinleri korumak için önemli olduğu unutulmamalıdır.

Anahtar Sözcükler: Çocuk, COVİD-19, Çocuk acil

INTRODUCTION

A new type of coronavirus, known as severe acute respiratory distress syndrome coronavirus 2 (SARS-CoV-2), initially emerged in China in December 2019 (1). The disease, which is transmitted through droplets and respiratory secretions, can also be spread by asymptomatic individuals (2). On January 30, 2020, the World Health Organization declared the outbreak a pandemic, and on February 12, 2020, it was officially named COVID-19. The first case in Türkiye was reported on March 11, 2020.

The diagnosis of coronavirus disease was first reported in a child in Shenzhen in January 2020 (3). In children, COVID-19 generally follows a mild course, and it has been observed that 50-70% of cases recover asymptomatically (4,5). The most common symptoms in symptomatic pediatric patients are fever and cough, while diarrhea is less commonly reported (6). Based on clinical symptoms, the disease is classified into asymptomatic, mild, moderate, severe, and critical categories (7). Although COVID-19 tends to have a mild clinical course in previously healthy children, it can lead to severe illness and even death in children with underlying chronic conditions, who belong to the high-risk group.

In the study, we aimed to evaluate pediatric patients with COVID-19 who were admitted to the Pediatric Emergency Department (PED) during the first ten months of the pandemic, focusing on their symptoms, as well as their clinical, laboratory, and radiological findings.

MATERIALS and METHODS

The study was conducted on patients aged 0-18 years, who were admitted to the PED of a tertiary university hospital in Ankara, the capital city of Türkiye, between March 2020 and January 2021. Patients who were admitted during the study period and diagnosed with pediatric coronavirus disease were included, while those who refused treatment and left the hospital without permission were excluded. Demographic data, laboratory and radiological findings, and patient follow-ups were retrospectively obtained from computer records.

The clinical severity classification of pediatric coronavirus disease cases was based on the classification proposed by Dong et al. (8): (a) asymptomatic infection, which included cases with positive diagnoses but no clinical or radiological findings; (b) mild disease, which included cases with acute upper respiratory tract infection without clinical and radiological pneumonia; (c) moderate disease, which included cases with symptoms of pneumonia and respiratory tract infection; (d) severe-critical illness, which included cases with progressive respiratory illness, dyspnea, central cyanosis, acute respiratory distress syndrome, or organ dysfunction such as respiratory failure, shock, encephalopathy, myocardial damage, coagulation abnormalities, and acute kidney injury.

The SARS-CoV-2 nucleic acid was detected using reverse transcription polymerase chain reaction (RT-PCR) following the guidelines provided by the World Health Organization (9).

Hemoglobin and leukocyte counts were evaluated separately according to the age of the patients. Hemoglobin and leukocyte counts were evaluated separately based on the patients' age. The following cutoff values were used to determine high levels: CRP > 10 mg/L, procalcitonin > 0.5 ng/mL, LDH > 300 U/L, ALT > 45 U/L, AST > 50 U/L, creatinine > 62 µmol/L, blood urea nitrogen > 7.1 mmol/L, CK > 170 U/L, CK-MB > 25 U/L, and D-dimer > 0.55 mg/L.

The chest X-ray was evaluated by clinicians.

Approval for the study was obtained from the Ankara Training and Research Hospital, Clinical Research Ethics Committee (date: June 30, 2021, number: 600/2021).

Statistical Analyses

Statistical analyses were performed using the SPSS software version 26. The distribution of variables was assessed

through visual methods (histograms, probability plots) and analytical methods (Kolmogorov-Smirnov/Shapiro-Wilk's test) to determine their normality. Descriptive analyses were presented using frequency tables for ordinal variables, while medians and minimum-maximum values were used for non-normally distributed variables. Non-parametric tests were conducted to compare these variables as well as the ordinal variables. Categorical variables were analyzed using frequency distributions and compared using Chi-squared or Fisher's Exact tests. The Kruskal-Wallis test was employed for multiple comparisons. All tests were two-tailed in all analyses, and p <0.050 was considered significant.

RESULT

Out of the 26.947 patients admitted to the PED between April 2020 and January 2021, 1.007 (3.7%) were tested and confirmed to be positive for SARS-CoV-2 PCR. Among these patients, 512 (50.8%) were female, and 495 (49.2%) were male. The median age of the 1,007 patients was 171 months (min-max: 2-226). When evaluating the clinical severity classification, mild cases accounted for 81% (n=818), and asymptomatic cases accounted for 10.5% (n=106), totaling 91.74% (n=924) of all patients. It was observed that children with mild clinical presentation were older compared to those with other clinical presentations, and this difference was statistically significant (p=0.010) (Table I, Figure 1-3).

Among the patients with coronavirus disease, 901 (89.4%) presented with symptoms, while only 10.5% (n=106) were asymptomatic. Fever was the most common symptom, reported by 45.6% (n=460) of patients. Cough was the second most prevalent symptom, affecting 38.3% (n=383) of cases, followed by sore throat at 26.7% (n=269), and headache at 13% (n=136) (Table II).

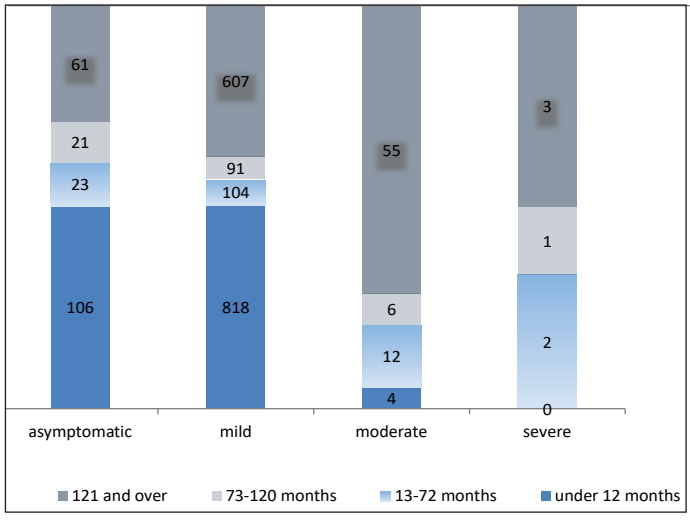

Figure 1: Clinical severity according to age

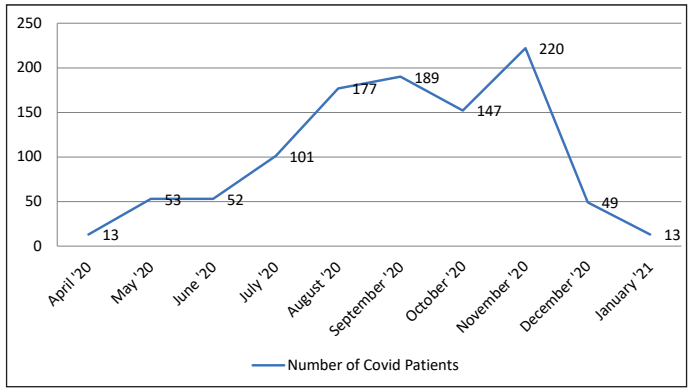

Figure 2: Number of SARS-CoV-2 PCR-positive patients by months

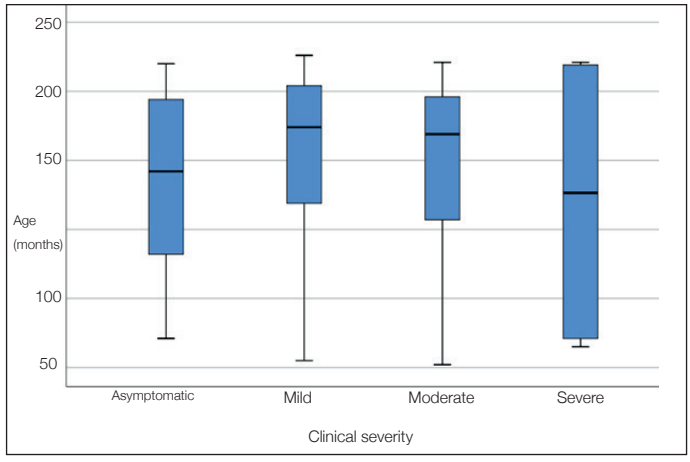

Figure 3: Clinical severity according to age

Patients were divided into four age groups: under 12 months, 13-72 months, 73-120 months, 121 months, and older. Fever (p<0.001), vomiting and/or diarrhea (p=0.010) were substantially more prevalent at the age of 121 months and older (Table II).

Leucopenia was the most common finding in laboratory parameters. It was higher in 38.5 % (n=110) of patients. This was followed by elevated CRP (28.9%), lymphopenia (25.2%), and elevated Procalcitonin levels (5.7%). When CRP, procalcitonin and troponin values were evaluated according to the severity of the disease, CRP, procalcitonin and troponin were found to be significantly higher in the severe group (p=0.019; p=0.003, p=0.013) (Table III).

Chest X-ray was obtained in 74.3% (n=749) of patients, with 80 (10.7%) showing abnormal results. The most common abnormality observed was consolidation, found in 55 (7.3%) patients. This finding was statistically significant in patients with moderate clinical presentation compared to other groups (p<0.001). Among the 20 patients who underwent chest tomography, 8 had abnormal findings, including a ground glass appearance in 6 patients (p=0.006) and pleural effusion in 2 patients (Table IV).

When analyzing symptoms and findings based on gender, it was found that headache was significantly more common in

Table I: Demographic characteristics of the groups

	Total (n=1007)	Asymptomatic (n= 106)	Mild (n=818)	Moderate (n=77)	Severe (n=6)	p
Age (months)*,	171 (2-226)	142 (21-220)	174(5-226)	169(2-221)	121(15-221)	0.010‡
Gender†						
Female	512 (50.8)	50 (47.2)	422 (51.6)	36 (46.8)	4 (66.7)	
Male	495 (49.2)	56 (52.8)	396 (48.4)	41 (53.2)	2 (33.3)	0.597§
Hospitalization†	104 (10.3)	20 (18.9)	60 (7.3)	18 (23.4)	6 (100)	0.002§
Chronic disease (+)†	38 (3.8)	2 (1.9)	29 (3.5)	4 (5.2)	3 (50.0)	0.004§
Hematological/Oncological	3 (7.9)	0	3 (10.3)	0	0	
Neurological	6 (15.8)	1 (50.0)	1 (3.4)	2 (25.0)	2 (66.7)	
Asthma	14 (36.8)	0	11 (37.9)	3 (75.0)	0	<0.001§
Genetic disease	1 (2.6)	0	0	0	1 (16.7)	
Other	14 (36.8)	0	14 (48.3)	0	0	

**(median,min-max), †n (%), ‡Kruskal Wallis, §Chi-Square test*

Table II: Symptoms according to groups

Symptoms n(%)	Total (n=901)	Mild (n=818)	Moderate (n=77)	Severe (n=6)	p
Fever	460 (51)	414 (50.6)	41 (53.2)	5 (83.3)	0.228
Headache	136 (15.1)	127 (15.5)	9 (11.7)	0	0.390
Sore throat	269 (29.8)	256 (31.3)	13 (16.9)	0	0.003
Rhinorrhea	50 (5.5)	47 (5.7)	2 (2.6)	1 (16.7)	0.274
Chest pain	17 (1.9)	14 (1.7)	3 (3.9)	0	0.437
Dyspnea	33 (3.6)	20 (2.4)	12 (15.6)	1 (16.7)	0.001
Cough	383 (42.5)	337 (41.2)	45 (58.4)	1 (16.7)	0.006
Vomiting	78 (8.6)	72 (8.8)	4 (5.2)	2 (33.3)	0.055
Diarrhea	93 (10.3)	84 (10.3)	7 (9.1)	2 (33.3)	0.169
Abdominal pain	40 (4.4)	36 (4.4)	4 (5.2)	0	0.724
Weakness	140 (15.5)	132 (16.1)	7 (9.1)	1 (16.7)	0.221
Myalgia	125 (13.9)	118 (14.4)	7 (9.1)	0	0.266
Rash	2 (0.2)	1 (0.1)	1 (1.3)	0	0.309
Conjunctivitis	4 (0.4)	3 (0.4)	1 (1.3)	0	0.604
Loss of smell and taste	117 (12.9)	106 (13.0)	11 (14.3)	0	0.603
Abnormal Respiratory system examination	25 (2.8)	12 (1.5)	11 (14.3)	2 (33.3)	0.001

males (p=0.028), while contact history was significantly more common in females (p=0.044). No gender difference was observed in other symptoms and findings (p>0.050).

DISCUSSION

Our study is a comprehensive investigation that evaluates the demographic, clinical, and radiological characteristics of 1007 pediatric patients with coronavirus disease who were admitted to the PED. Most of these patients had either asymptomatic or mild presentations. However, it was observed that the disease had a more severe clinical course in patients older than 120 months. In terms of overall admissions, 3.7% of our pediatric patients were diagnosed with coronavirus disease, while this rate varied between 0.2% and 3.0% in other studies (9,10). In our study, the incidence of coronavirus disease was similar in both girls and boys among pediatric patients. Although females were more prevalent in the group with a severe clinical status according to the clinical scoring system, no statistically significant difference in gender was observed (8-10).

The primary manifestations of coronavirus disease in children include fever, nasal congestion, sore throat, and less frequently, gastrointestinal symptoms such as abdominal pain, vomiting, and diarrhea (12,13). Although cough is reported as a common symptom in some studies, fever has consistently been identified as the most prevalent symptom in many studies (5,14,15). In a meta-analysis of 48 pediatric studies on coronavirus disease, fever was found to be the most frequently reported symptom, while gastrointestinal symptoms were less commonly reported. The same meta-analysis highlighted that infants under one year of age who presented with gastrointestinal symptoms had a poor prognosis (16). Gastrointestinal symptoms can

Table III: Laboratory findings according to groups

Laboratory findings n(%)	Total (n=286)	Mild (n=237)	Moderate (n=43)	Severe (n=6)	p*
Leukocytosis	46 (16.1)	36 (15.2)	7 (16.3)	3 (50.0)	0.072
Leucopenia	110 (38.5)	90 (38.0)	17 (39.5)	3 (50.0)	0.830
Neutropenia	23(8.0)	21 (8.9)	2 (4.7)	0	-
Lymphopenia	72 (25.2)	62 (26.2)	9 (20.9)	1 (16.7)	0.670
Thrombocytopenia	8 (2.8)	6 (2.5)	0	2 (33.3)	0.009
Elevated CRP	(n=287) 83 (28.9)	(n=227) 65 (27.4)	(n=44) 13 (29.5)	(n=6) 5 (83.3)	0.019
Elevated procalcitonin	(n=227) 13 (5.7)	(n=186) 9 (4.8)	(n=36) 1 (2.8)	(n=5) 3 (60.0)	0.003
Elevated D-dimer	(n=32) 7 (21.9)	(n=21) 4 (19.0)	(n=6) 2 (33.3)	(n=5) 1 (20.0)	0.768
Elevated troponin	(n=184) 14 (7.6)	(n=145) 8 (5.5)	(n=33) 3 (9.1)	(n=6) 3 (50.0)	0.013

*****Kruskal Wallis Test*

Table IV: Chest X-Ray and CT findings according to groups

	Total (n=749)	Mild (n=666)	Moderate (n=77)	Severe (n=6)	p
Chest X-Ray findings					
Normal	669 (89.3)	655 (98.3)	14 (18.2)	0	
Consolidation	55 (7.3)	5 (0.8)	44 (57.1)	6 (100)	
Hyperaeration	1 (0.1)	0	1 (1.3)	0	
Bronchovascular change	24 (3.2)	6 (0.9)	18 (23.4)	0	
Pleural effusion	2 (0.3)	1 (0.2)	0	1 (16.7)	0.001
	Total (n=16)	**Mild (n=8)**	**Moderate (n=5)**	**Severe (n=3)**	**p**
CT Findings					
Normal	8 (50.0)	7 (87.5)	1 (20.0)	0	0.006
Ground glass	6 (37.5)	1 (12.5)	2 (40.0)	3 (100)	
Subpleural consolidation	2 (12.5)	0	2 (40.0)	0	

occur without respiratory symptoms, and the most commonly reported gastrointestinal symptoms in children are diarrhea, vomiting, and abdominal pain (17). Consistent with the literature, our study found fever to be the most prevalent symptom, while diarrhea, vomiting, and abdominal pain were observed less frequently. Furthermore, vomiting and diarrhea were the most prevalent symptoms following fever in patients with a severe clinical presentation. Although there is no specific laboratory finding exclusive to pediatric patients with coronavirus disease, common laboratory results include leukopenia, leukocytosis, and lymphopenia. Different studies have reported varying prevalence rates of these laboratory findings. Some studies have highlighted lymphopenia as the most common finding, while others have identified leukopenia and lymphopenia as the predominant findings. In some studies, leukocytosis and lymphopenia were reported as the most common findings (11,18-22). In a meta-analysis, leukocytosis and lymphopenia were found to be the most commonly observed laboratory findings (16). Consistent with the literature, our study also identified leukopenia and lymphopenia as the most common laboratory abnormalities. Another meta-analysis that focused on adult patients reported that thrombocytopenia was associated with an increased risk of severe disease and mortality in individuals with coronavirus disease (23). Similarly, in our study, thrombocytopenia was found to be significantly higher in the severe clinical group, supporting the association between thrombocytopenia and disease severity.

Moreover, several studies have reported elevated levels of CRP, procalcitonin, and troponin, along with other laboratory findings, particularly in patients requiring hospitalization or classified as having a severe clinical presentation (24,25). Consistent with the existing literature, our study found elevated levels of these markers in a majority of patients within the severe clinical group.

The utilization of imaging techniques in children with COVID-19 is limited and not routinely recommended. While computed tomography (CT) scans play a crucial role in treatment planning for adults, especially in cases where there is a clinical suspicion but negative SARS-CoV-2 PCR results or delayed access to CoV-2 PCR results, their usage in children is extremely restricted (26,27).

In comparison to studies conducted on adults, pediatric patients exhibit a much lower incidence of abnormal findings on chest computed tomography (CT) scans (28). Furthermore, caution

is warranted due to the potential risk of radiation-induced malignancies associated with CT scans (29). In our study, chest X-rays were performed in 74.3% of the patients, and 89.3% of these X-rays were interpreted as normal. Among the severe patient group, consolidation was observed in all cases on chest radiographs. Additionally, 16 patients (1.5%) underwent chest tomography, with 8 of them (50%) displaying abnormal findings. In a study evaluating children, 64.9% of coronavirus disease patients were diagnosed with radiologically confirmed pneumonia (11). However, we did not observe such findings in our study.

Pediatric patients with coronavirus disease typically exhibit an asymptomatic or mild symptomatic course, while those with comorbidities and younger age groups tend to experience a more severe course. The prevalence of asymptomatic pediatric cases of coronavirus disease varies between 10.7% and 56.6%, often observed in individuals who have been in contact with infected individuals. These variations in rates are likely attributed to differences in protocols across hospitals within and between countries (30). In another study, the rate of asymptomatic patients was reported as 62%, while severe cases accounted for 12% (31). A multicenter study reported rates of asymptomatic and mild cases ranging from 80% to 90% (26). A study conducted in China, involving 2143 children with a median age of 7, reported that 41% of the children had pneumonia with a moderate clinical course, while 2.5% exhibited a severe clinical course (8). Consistent with the literature, our study found that 91.7% of cases were mild or asymptomatic, and these children had a statistically significantly younger median age compared to other groups.

Hospitalization rates for pediatric patients with coronavirus disease vary due to differing criteria in different countries. A study conducted in Greece reported a hospitalization rate of 26.6%, with a higher proportion of hospitalized cases observed among children under the age of 5 (32). In a study conducted in the United States between February 12 and April 2, which included 149.082 cases diagnosed with coronavirus disease, only 1.7% of the cases were in the age range of 0-18, and 5.7% of pediatric patients required hospitalization and follow-up (5). In a similar study conducted in Italy involving 28 centers, the hospitalization rate was 57.7% (26). In our study, the hospitalization rate was 10.3%. In the early days of the pandemic, our hospital served as the reference hospital, and all pediatric patients with coronavirus disease were admitted, including asymptomatic patients.

The most significant limitation of our study is its single-center nature and the retrospective collection of data from computer records. However, it is worth noting that the study period included a substantial number of cases, as our hospital was the first in our country to collect pediatric cases of coronavirus disease.

In conclusion, although coronavirus disease tends to manifest with asymptomatic or mild symptoms in children, it is crucial to recognize that severe cases and even fatalities can occur, albeit rarely. Detecting asymptomatic cases is particularly important for preventing transmission, especially to vulnerable populations such as the elderly and individuals with underlying health conditions

REFERENCES

1. Zu ZY, Jiang MD, Xu PP, Chen W, Ni QQ, Lu GM, et al. Coronavirus Disease 2019 (COVID-19): A Perspective from China. Radiology 2020;21:200490.
2. The Coronavirus Scientific Advisory Board (Türkiye). 14 April 2020. [Internet] https://covid19bilgi.saglik.gov.tr/depo/rehberler/COVID-19_Rehberi.pdf Last update:
3. Chan JF, Yuan S, Kok KH, To KK, Chu H, Yang J, et al. A familial cluster of pneumonia associated with the 2019 novel coronavirus indicating person-to-person transmission: a study of a family cluster. Lancet 2020;395:514-23.
4. Wang D, Ju XL, Xie F, Lu Y, Li FY, Huang HH, et al. Clinical analysis of 31 cases of 2019 novel coronavirus infection in children from six provinces (autonomous region) of northern China. Zhonghua Er Ke Za Zhi 2020;58:269-74.
5. CDC COVID-19 Response Team. Coronavirus Disease 2019 in Children - United States, February 12-April 2, 2020. MMWR Morb Mortal Wkly Rep 2020;69:422-6.
6. Stokes EK, Zambrano LD, Anderson KN, Marder EP, Raz KM, El Burai Felix S, et al. Coronavirus Disease 2019 Case Surveillance - United States, January 22-May 30, 2020. MMWR Morb Mortal Wkly Rep 2020;19;69:759-65.
7. de Souza TH, Nadal JA, Nogueira RJN, Pereira RM, Brandão MB. Clinical manifestations of children with COVID-19: A systematic review. Pediatr Pulmonol 2020;55:1892-9.
8. Dong Y, Mo X, Hu Y, Qi X, Jiang F , Jiang Z, et al. Epidemiological Characteristics of 2143 Pediatric Patients With 2019 Coronavirus Disease in China. Pediatrics 2020;58:712–3.
9. Wu Z, McGoogan JM. Characteristics of and important lessons from the coronavirus disease 2019 (COVID-19) outbreak in China: summary of a report of 72314 cases from the Chinese center for disease control and prevention. JAMA 2020;323:1239–42.
10. Ladhani SN, Amin-Chowdhury Z, Davies HG, Aiano F, Hayden I, Lacy J, et al. COVID-19 in children: analysis of the first pandemic peak in England. Arch Dis Child. 2020;105:1180-5.
11. Lu X, Zhang L, Du H, Zhang J, Li YY, Qu J, et al. SARS-CoV-2 Infection in Children. New Engl J Med 2020;382:1663-5.
12. Foster CE, Marquez L, Davis AL, Tocco E, Koy TH, Dunn J, et al. A surge in pediatric coronavirus disease 2019 cases: the experience of Texas Children's Hospital from March to June 2020. J Pediatric Infect Dis Soc 2020;10:593–8.
13. Jahangir M, Nawaz M, Nanjiani D, Siddiqui MS. Clinical manifestations and outcomes of COVID-19 in the paediatric population: a systematic review. Hong Kong Med J 2021;27:35–45.
14. Garazzino S, Montagnani C, Donà D, Meini A, Felici E, Vergine G, et al. Multicentre Italian study of SARS-CoV-2 infection in children and adolescents, preliminary data as at April 10 2020. Euro Surveill 2020;25:2000600.

15. Lu X, Xing Y, Wong GW. COVID-19: lessons to date from China. Arch Dis Child. Forthcoming 2020;105:1146-50.
16. Cui X, Zhao Z, Zhang T, Guo W, Guo W, Zheng J, et al. A systematic review and meta-analysis of children with coronavirus disease 2019 (COVID-19). J Med Virol 2021;93:1057-69.
17. Tian Y, Rong L, Nian W, He Y. Review article: gastrointestinal features in COVID-19 and the possibility of faecal transmission. Aliment Pharmacol Ther 2020;51:843-51.
18. Zheng F, Liao C, Fan Q, Chen HB, Zhao XG, Xie ZG, et al. Clinical characteristics of children with coronavirus disease 2019 in Hubei, China. Curr Med Sci 2020;40:275-80.
19. Qiu H, Wu J, Hong L, Luo Y, Song Q, Chen D. Clinical and epidemiological features of 36 children with coronavirus disease 2019 (COVID-19) in Zhejiang, China: an observational cohort study. Lancet Infect Dis 2020;20:689-96.
20. Ma Y-L, Xia S-Y, Wang M, Zhang SM, DU WH, Chen Q. Clinical features of children with SARS-CoV-2 infection: an analysis of 115 cases. Chin J Contemp Pediatr 2020;22:290-3.
21. Wang XF, Yuan J, Zheng YJ, Chen J, Bao YM, Wang YR, et al. Retracted: Clinical and epidemiological characteristics of 34 children with 2019 novel coronavirus infection in Shenzhen. Zhonghua Er Ke Za Zhi 2020;17;58:E008.
22. Singh P, Attri K, Mahto D, Kumar V, Kapoor D, Seth A. Clinical Profile of COVID-19 Illness in Children-Experience from a Tertiary Care Hospital. Indian J Pediatr 2022;89:45-51.
23. Lippi G, Plebani M, Henry BM. Thrombocytopenia is associated with severe coronavirus disease 2019 (COVID-19) infections: A meta-analysis. Clin Chim Acta 2020;506:145-8.
24. Korkmaz MF, Türe E, Dorum BA, Kılıç ZB. The Epidemiological and Clinical Characteristics of 81 Children with COVID-19 in a Pandemic Hospital in Türkiye: an Observational Cohort Study. J Korean Med Sci 2020;35:e236.
25. Rajapakse N, Dixit D. Human and novel coronavirus infections in children: a review. Paediatr Int Child Health 2021;41:36-55.
26. Parri N, Lenge M, Cantoni B, Arrighini A, Romanengo M, Urbino A, et al. COVID-19 in 17 Italian pediatric emergency departments. Pediatrics 2020;146:e20201235.
27. Bao C, Liu X, Zhang H, Li Y, Liu J. Coronavirus disease 2019 (COVID-19) CT findings: a systematic review and metaanalysis. J Am Coll Radiol 2020;17:701–9
28. Chen A, Huang J, Liao Y, Liu Z, Chen D, Yang C, et al. Differences in Clinical and Imaging Presentation of Pediatric Patients with COVID-19 in Comparison with Adults. Radiol Cardiothor Imaging 2020;2:e200117.
29. Bozan Ö, Aksel G, Kahraman HA, Giritli Ö, Eroğlu SE. Comparison of PECARN and CATCH clinical decision rules in children with minor blunt head trauma. Eur J Trauma Emerg Surg 2019;45:849-55.
30. Simsek Uzunoglu S, Akca H. Systematic Review: Clinical Symptoms and Laboratory and Radiology Findings in Children with COVID-19. Niger J Clin Pract 2021;24:1259-67.
31. Shahid S, Raza M, Junejo S, Maqsood S. Clinical features and outcome of COVID-19 positive children from a tertiary healthcare hospital in Karachi. J Med Virol 2021;93:5988-97.
32. Maltezou HC, Magaziotou I, Dedoukou X, Eleftheriou E, Raftopoulos V, Michos A, et al. Children and adolescents with SARS-CoV-2 infection: epidemiology, clinical course and viral loads. Pediatr Infect Dis J 2020;39:e388–92.