Comparison of Epidemiologic and Clinical COVID-19 Profiles in Children in Argentina, During Circulation of Original and Variant (Alpha, Gamma and Lambda) Strains

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Background: Information on the impact of the different variants in children in Latin America is scarce. The objective of this study was to describe epidemiological and clinical features of COVID-19 infection in children under 18 years of age in Argentina, comparing the periods before and after the circulation of new variants.

Methods: Observational, cross-sectional, multicentric, analytical study. All patients under 18 years of age with confirmed SARS-CoV-2 infection admitted at 22 healthcare centers were included. Two study periods were established: Period 1 (EW10-2020 to EW12-2021) for the Wuhan strain; Period 2 (EW13 to EW35 2021) for Alpha, Gamma, Delta and Lambda variants.

Findings: A total of 6330 confirmed cases were included. Period 1: 3575 (56.5%), period 2: 2755 (43.5%). During period 2, a lower number of asymptomatic cases was observed, while general, respiratory and neurological signs and symptoms increased in all age groups. Oxygen therapy requirement was higher during the first period (36.7% vs 19.1%; $P < 0.001$). No significant differences were observed in the rates of severe or critical cases (6.3% vs 5,4%; $P = 0.102$), intensive care admission (2.1% vs 2%; $P < 0.656$) or case fatality (0.3% vs 0.5 %; $P < 0.229$). MIS-C cases occurred more frequently during the first period (1.9% vs 1.1%; $P = 0.009$)

Interpretation: The clinical spectrum of COVID-19 in Argentina has evolved. With the emergence of new variants, although the number of asymptomatic cases declined, numbers of severe and critical cases, as well as case fatality rates in children, remained unchanged.

Key Words: SARS-CoV-2, COVID-19, children, variants

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INTRODUCTION

Since the beginning of the pandemic in March 2020, the spread of COVID-19, a severe acute respiratory syndrome caused by coronavirus type 2 (SARS-CoV-2), has had a significant impact on global health, as well as on society and the economy, worldwide.[1] In Argentina, the first case was reported on March 3, 2020, and by November 2021 over 5.2 million cases and 116 057 deaths had been recorded.[2,3] Children under 18 years of age represented 8.5% of all confirmed cases and case fatality in this age group was estimated to be 0.06%.

Although initial reports showed children and adolescents generally presented mild symptoms (15–35 % asymptomatic), usually recovering within 1 to 2 weeks of disease onset,[4,5] severe and acute COVID-19 cases requiring mechanical ventilation (0.14%) were also described,[6] as well as a multisystem inflammatory syndrome (MIS-C), a rare but severe complication in children. Additionally, patients with comorbidities presented an increased risk of severe disease.[7] In a prior study conducted in Argentina, a history of asthma, bronchopulmonary dysplasia, congenital heart disease, moderate to severe malnutrition, obesity and chronic neurological conditions, were associated with greater disease severity.[8]

In December 2020, the World Health Organization (WHO) issued an alert regarding the circulation of new SARS-CoV-2 variants of interest, exhibiting improved transmission, increased severity and in some cases, potential to evade vaccine-induced immunity.

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By November 2021, WHO had described four variants of concern (VOC), namely, Alpha, Beta, Gamma, and Delta, and two variants of interest (VOI), Lambda and Mu.[9]

Genomic surveillance of SARS-CoV-2 began in May 2020 in Argentina; circulation of new variants was observed in epidemiological week (EW) 10, 2021, comprising over 50% of cases assessed by EW 13. As of EW 31, prevalent variants were Gamma (58.1%), Lambda (20.3%), and Alpha (8.5%), uniformly distributed throughout the country.[10] Until then, Delta variant was only described in Argentina associated with travelers and was not predominant. Information on the impact of the different variants in children in Latin America is scarce. Countries in the northern hemisphere reported higher incidence and hospitalization rates during Delta circulation.[11,12]

In Argentina, as in other countries in the world, disease burden in children varied over time.[13] At the beginning of the pandemic, children under 18 years of age represented 7% of cases, reaching 20% by the second year. Hospitalization rates peaked during variant circulation, affecting mostly children under 4 years and adolescents 12–14 years old. Similar bimodal age distribution was observed in other countries.[11]

On December 29, 2020, a COVID-19 vaccination campaign was launched for at-risk populations owing to high exposure and morbidity-mortality, initially targeting healthcare workers and subsequently the elderly and individuals with co-morbidities.[14] In June 2021, the campaign was expanded to include all adults age 18 years or older without risk factors; vaccination of adolescents began in August 2021.[15]

The objective of this study was to describe epidemiological and clinical features of COVID-19 infection in children under 18 years of age in Argentina, comparing the periods before and after the circulation of new variants.

MATERIAL AND METHODS

This was an observational, cross-sectional, multicentric, analytical study. All patients under 18 years of age with confirmed SARS-CoV-2 infection (as defined by the National Ministry of Health (MoH)), managed at 22 healthcare centers in seven Argentine provinces, were included. The 22 health centers included were general hospitals with pediatrics units and pediatric tertiary hospitals. Two study periods were established depending on dates of variant circulation onset:

- Period 1, between March 11 (EW10), 2020 and March 27 (EW12), 2021 for the Wuhan strain.
- Period 2 between March 28 (EW13), 2021 and August 31 (EW35), 2021 for Alpha, Gamma, Lambda and Delta variants.

Data were collected up to the time when adolescent vaccination started.

Data Collection

At the sites, investigators collected data on demographics (age, gender, residence), epidemiology (contact with confirmed COVID-19 case and/or acute upper respiratory infection), clinical status (time since symptom onset, hospitalization, comorbidities - premature birth, chronic or recurrent respiratory disease, immunodeficiency, malnutrition, congenital cardiopathy, neurological, liver, kidney and metabolic diseases - signs and symptoms, severity, clinical course and treatment), imaging and laboratory studies (when available).

Overcrowded housing conditions were defined by the National Institute of Statistics and Surveys (INDEC) as those in which three or more individuals share a single room; and vulnerable communities as those in which eight or more families live together in an area where over half lack property rights and access to at least two basic sanitation services (according to the National Registry of Vulnerable Communities).

The WHO COVID-19 severity score was applied to classify severe and critical cases.[16]

Hospitalization Criteria

In Argentina, during most of the first period, there were strict criteria for hospitalization in pediatrics: Age under 12 months, people under 18 years with comorbidities or social vulnerability prevented the correct isolation of the case at home. In second period that criteria were relaxed and were related to age less than 6 months or clinical severity of the condition.

Testing Criteria

Suspected cases of COVID-19 definition also changed. During the first period, the testing criteria included symptomatic people (fever with cough, sore throat, or respiratory distress) and asymptomatic people who were in contact with a positive case. During the second period, testing of symptomatic people (fever, cough, respiratory distress, anosmia, dysgeusia, myalgia, diarrhea, vomiting, rhinorrhea) was recommended, in addition most of the centers used daily preadmission testing for elective procedures or unscheduled admission.

Etiological Diagnosis

Cases were confirmed by direct detection of viral genome using molecular techniques (RT-PCR) or antigen tests in nasopharyngeal aspirates or swab samples. For respiratory viruses such as a respiratory syncytial virus (RSV), adenovirus (AV), influenza (IF) A and B, and parainfluenza (PIF) 1, 2 and 3, other diagnostic tests were accepted, namely, indirect immunofluorescence (IFI), FilmArray™ and amplified PCR.

In children who developed multisystem inflammatory syndrome (MIS-C) after COVID-19 infection, positive serology for SARS-CoV-2 was acceptable, as per MoH case definition.

Statistics

Descriptive analysis was conducted, numerical variables were expressed as mean and standard deviation or median and interquartile range according to distribution, and categorical variables as proportions and 95% confidence intervals (95% CI).

Comparisons between periods were conducted using a T-test or Wilcoxon's test for continuous variables; chi square with Yates correction or a Fisher test were used for categorical ones. P values <0.05 were considered statistically significant. MIC-C cases were excluded from the analysis of complementary test results.

A multiple logistic regression model was constructed to identify variables predicting severity during each period. Severe cases included those classified as severe or critical according to WHO score and nonsevere included asymptomatic, mild or moderate cases. Statistical analysis was performed using STATA/SE version 1. Odds ratio (OR) and 95% CI were used as a measure of association. In the final model, we assessed calibration and discrimination, the former based on the Hosmer and Lemeshow test as deciles of fitted risk values, the latter using the area under the receiver operating characteristic (ROC) curve. Global calibration was considered good when P value was high ($P > 0.05$), and discrimination was adequate when the area under the curve was >0.7.

Ethics

All forms were coded before analysis to ensure anonymity, complying with the Declaration of Helsinki and the Habeas Data Law (number 25326). The study was first approved by the Research and Ethics Boards at each participating site.

RESULTS

Between EW12, 2020 and EW35, 2021, a total of 6330 confirmed cases of COVID-19 were reported; of these, 3575 (56.5%) were included over 54 weeks during period 1, and 2755 (43.5%) over 23 weeks, during period 2. Demographic, epidemiologic, and clinical features of the population are shown and compared in Table 1. The median age of subjects was older during period 2, and rates of overcrowded housing, history of contact with a person with COVID-19, comorbidities and hospitalizations were lower during period 2 than period 1.

Clinical presentation of COVID-19 was significantly different between periods. During period 2, a lower number of asymptomatic cases was observed, while general, respiratory and neurological signs and symptoms increased in all age groups. (Table 2) The greatest difference between periods was seen for neurological symptoms in individuals aged 10 years and older. (Figure 1)

Fever, cough, sore throat and headache were the most prevalent signs and symptoms, overall symptomatic cases were more common in the second period than before variant circulation. (Figure 2).

Complementary studies (imaging and laboratory) from immunocompromised and MIS-C patients were excluded from the analysis. Pulmonary infiltrates on chest radiographs, mainly interstitial images, were observed more frequently during period 2. (30.2 % vs 52.9 %; $P < 0.001$). (Table 3)

Other respiratory viruses were investigated in 1.36% (n = 86) of the samples (55 in period 1 and 31 in period 2). Co-infection was detected in 4 cases, adenovirus (2), metapneumovirus and picornavirus in period 1, and in 23 cases in period 2: RSV (15), adenovirus (6), picornavirus (2) and metapneumovirus.

With respect to clinical courses, overall, 31% of subjects required supplemental oxygen therapy, significantly more often during the first period (36.7 % vs 19.1 %; $P < 0.001$). No significant differences were observed between the two periods in the rates of severe or critical cases (6.3% vs 5,4%; $P = 0.102$), intensive care admission (2.1% vs 2%; $P < 0.656$) or case fatality (0.3% vs 0.5 %; $P < 0.229$) (Figure 3).

In the multivariate analysis, independent predictors of severity identified during period 1 included a history of asthma, bronchopulmonary dysplasia, obesity, cardiopathy, chronic neurological disorders, moderate and severe malnutrition, diabetes, age under 6 months and onco-hematological conditions. (Table 4). During the second period, low birth weight was an additional predictor, while bronchopulmonary dysplasia, malnutrition and diabetes did not correlate with severity. Living in a vulnerable neighborhood was an independent predictor, exhibiting a protective effect during period 1, yet conversely identified as predictor of severity during period 2.

MIS-C cases occurred more frequently during the first period (1.9% vs 1.1%; $P = 0.009$), and no significant differences were observed between periods regarding age, comorbidities, oxygen requirement, intensive care or case fatality; however, the use of immune globulin was higher during period 2 (56% vs 90%; $P < 0.001$) (Table 5).

TABLE 1. Comparison of Demographic, Epidemiologic and Clinical Features of the Study Population During Periods 1 and 2 (n = 6330)

Characteristics of the population		Total (n = 6.330) % (n)	Period 1 (n = 3.575) % (n)	Period 2 (n = 2.755) % (n)	P
Age in years (median; interquartile range)		7.5 (2.1–12.7)	5.8 (1.4–11.3)	9.5 (3.8–13.6)	<0.001
Age groups	<1 year	16.5% (1043)	20.9% (747)	10.7% (296)	<0.001
	1–4 years	22.2% (1407)	24.8% (886)	18.9% (521)	
	5–9 years	22.3% (1415)	22.6% (810)	21.9% (605)	
	10–14 years	27.5% (1742)	23.4% (836)	32.9% (906)	
	15–18 years	11.4% (723)	8.3% (296)	15.5% (427)	
Gender (male)		50.5% (3198)	50.4% (1802)	50.7% (1396)	0.833
Residence (BAMA)		77.9% (4936)	76.5% (2734)	79.9% (2202)	<0.001
Hospitalization		39.2% (2482)	58.1% (2078)	14.6% (404)	<0.001
Lives in vulnerable neighborhood		18.4% (1155)	27.3% (960)	7.1% (195)	<0.001
Critical overcrowding		18.2% (1140)	26.8% (938)	7.3% (202)	<0.001
Contact with person with COVID-19		54.6% (3455)	59.1% (2112)	48.7% (1343)	<0.001
Contact with person with acute respiratory infection (ARI)		16.2% (1027)	21.2% (759)	9.7% (268)	<0.001
Contact with family member person with COVID-19		92.7% (2954)	97% (2022)	84.6% (932)	<0.001
Comorbidities		18.2% (1150)	22.1% (792)	13% (358)	<0.001
Respiratory disease (%)	Asthma	4.6% (292)	5.8% (207)	3.1% (85)	<0.001
	Recurrent wheezing	2.9% (186)	4.3% (154)	1.2% (32)	<0.001
	Bronchopulmonary dysplasia	0.4% (24)	0.6% (20)	0.2% (4)	0.007
	Respiratory distress of newborn	0.2% (12)	0.2% (9)	0.1% (3)	0.251
	Cystic fibrosis	0.13% (13)	0.14% (5)	0.11% (2)	1.000
Metabolic disease (%)	Obesity	1.1% (69)	1.4% (49)	0.7% (20)	0.014
	Diabetes	0.5% (34)	0.6% (20)	0.5% (14)	0.863
Immunodeficiency (%)	Primary	0.5% (35)	0.6% (23)	0.4% (12)	0.307
	Onco-hematological condition	1.5% (97)	1.6% (56)	1.5% (41)	0.837
	Acquired	0.1% (8)	0.2% (6)	0.1% (2)	0.478
	Transplantation	0.1% (8)	0.03% (1)	0.15% (4)	0.174
	Immunosuppressive therapy	0.9% (61)	0.9% (32)	1.1% (29)	0.520
Malnutrition		0.5% (32)	0.6% (23)	0.3% (9)	0.106
Chronic neurological disorder		2.6% (166)	3.1% (112)	1.9% (54)	0.004
Congenital cardiopathy		1.2% (77)	1.2% (44)	1.2% (33)	1.000
Chronic kidney disease		0.8% (51)	0.9% (34)	0.6% (17)	0.157
Liver disease		0.24% (15)	0.3% (10)	0.2% (5)	0.603
Premature birth		1.4% (88)	1.9% (68)	0.7% (20)	<0.001

BAMA, Buenos Aires Metropolitan Area.

TABLE 2. Comparison of Clinical Presentation of COVID-19 Between Periods

Population	Symptoms	Period 1	Period 2	OR (95%CI)	p
Overall	Asymptomatic	18.8	8.5	2.5 (2.1–2.9)	<0.001
	General	62.0	69.9	0.7 (0.6–0.8)	<0.001
	Respiratory	51.5	63.5	0.6 (0.5–0.7)	<0.001
	Gastrointestinal	22.0	19.7	1.1 (1.01–1.3)	0.02
	Neurological	17.7	33.2	0.4 (0.3–0.5)	<0.001
	Others	7.2	9.9	0.7 (0.6–0.8)	<0.001

Note: Some cases had more than one sign or symptom. Symptom reference: • General: fever, malaise and myalgias. • Respiratory: cough, sore throat, runny nose and shortness of breath. • Gastrointestinal: vomiting, nausea, diarrhea and abdominal pain. • Neurological: headache and seizures. • Others: anosmia, dysgeusia and non-specific rash.

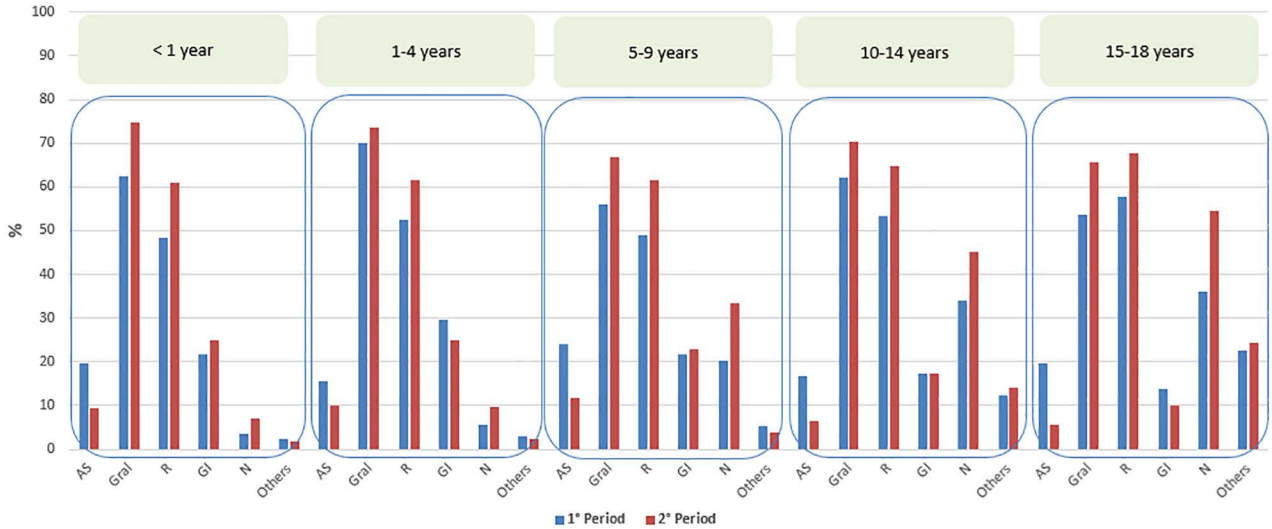

FIGURE 1. Comparison of clinical presentation of COVID-19 between periods and age groups. Note: some cases presented more than one sign or symptom. Symptom reference: • AS: asymptomatic • Gral (General): fever, malaise and myalgias. • R (Respiratory): cough, sore throat, runny nose and shortness of breath. • GI (Gastrointestinal): vomiting, nausea, diarrhea and abdominal pain. • N (Neurological): headache and seizures. • Other: anosmia, dysgeusia and non-specific rash.

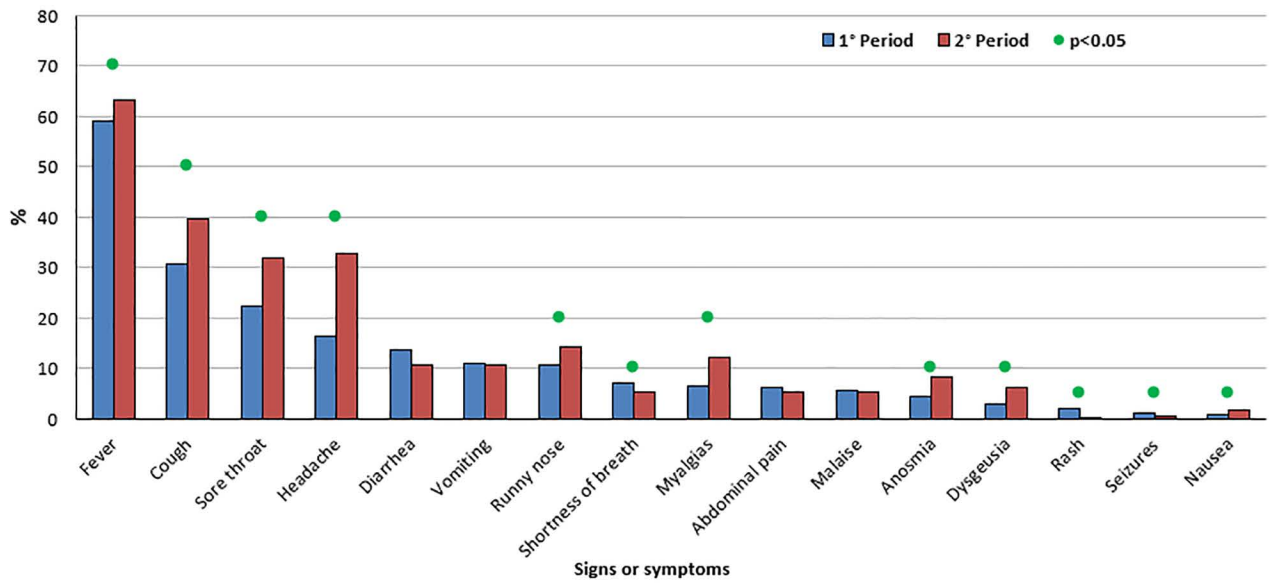

FIGURE 2. Comparison of frequency of signs and symptoms between periods.

TABLE 3. Complementary Studies (Imaging and Lab) by Period

Complementary studies	1° Period (n = 3408)	2° Period (n = 2658)	P
Imaging (%)			
Chest radiograph requested	20.7%	7.2%	**<0.001**
Abnormal chest radiograph	29.8%	55.5%	**<0.001**
Chest CT scan requested	0.76%	1.28%	**0.044**
Abnormal CT scan	50%	82.6%	**0.009**
Laboratory (Mean; SD)			
Laboratory analyses requested (%)	26,9%	13,9%	**0.033**
Leucocytes	9919 (191)	11087 (565)	**0.006**
Neutrophils	48.4 (0.7)	55.7 (1.3)	**<0.001**
Lymphocytes	39.7 (0.7)	33.8 (1.3)	**<0.001**
Platelets	287778 (6841)	297226 (11147)	0.22
ESR	26.9 (1.8)	28.7 (2.7)	0.31
CRP	25.9 (3.2)	34.2 (4.3)	0.10
Procalcitonin	10.3 (9.3)	2.3 (0.7)	0.90
Albumin	4 (0.1)	3.7 (0.1)	0.95
Ferritin	133 (22)	315 (54)	**0.006**
D dimer	727 (206)	1667 (586)	0.08

DISCUSSION

This study shows the epidemiological profile of COVID-19-infected children for two distinct pandemic periods, during which different variants were in circulation. Currently, information on variant infections in children is scarce. During Alpha, Gamma and Lambda variant prevalence, the average age of children infected was higher, as was observed in a similar study in Turkey, in which mean age of children infected by new variants was reported to be 9 years.[17]

During the second period of our study, a smaller proportion of cases referred to having contact with a probable or suspected COVID-19 case. Likewise, when new variants of concern appeared in other countries in Latin America, fewer children reported having been in contact with a positive case, who was not a family member.[18] This could be attributed to changes to isolation recommendations, since by March 2021, school attendance had become bimodal.

Local hospitalization rates were significantly lower when variants circulated, as opposed to what was observed in Europe, where Alpha and Gamma variants caused hospitalization rates to increase 2.3–3 and 3–13 times, respectively, compared to non-VOCs cases.[19] Similar rates were observed in the US for the Gamma variant, which was also associated with more severe disease compared to non-VOC.[20] Changes in management protocols could help explain these differences since initially, in Argentina, all children with COVID-19, even those with mild infections, were hospitalized. Subsequently, as more evidence became available, hospitalization was recommended only for those aged under 6 months, with co-morbidities or severe disease. Testing practices and criteria to decide which children should be hospitalized between the two periods may be the most likely reasons for higher hospitalization rates and less severity in clinical endpoints in the first period. However, we consider it important to include these data since they were those that occurred in the real world while care protocols were being modified and given the uncertainty of how SARS-CoV-2 could behave in pediatric patients.

Comorbid conditions were significantly less frequent during the second period than the first, as observed in Europe and US, where patients with Alpha and Gamma variant infections had

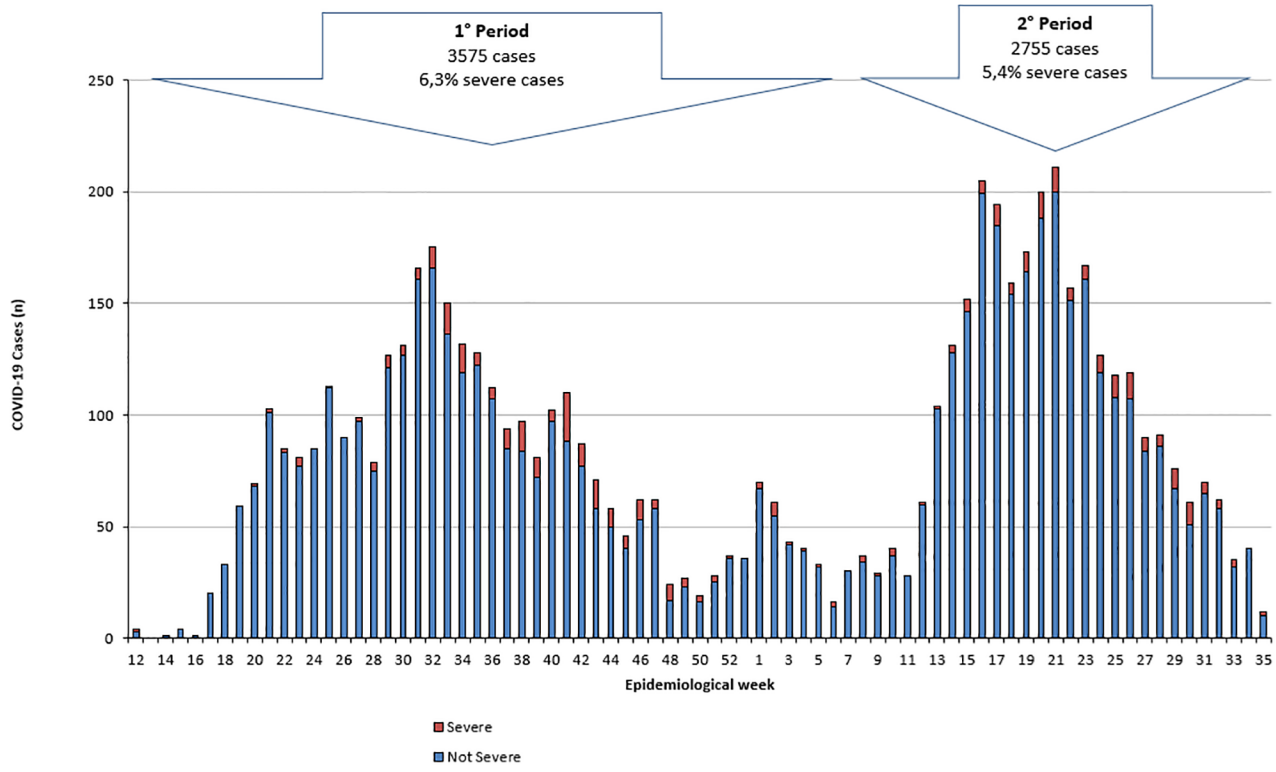

FIGURE 3. Severe and nonsevere COVID-19 by epidemiological week.

TABLE 4. Multivariate Analysis of Factors Associated with Severe COVID-19 in Both Periods

	Period 1		Period 2	
Variable	Odds Ratio (95%CI)	*P*	Odds Ratio (95%CI)	*P*
Asthma	3.9 (2.6–5.9)	<0.001	4.9 (2.5-9.7)	<0.001
Bronchopulmonary dysplasia	5.2 (1.8–15.1)	<0.001	10.8 (0.9–122.5)	0.053
Obesity	3.3 (1.6–7.1)	<0.001	3.3 (1.6–7.1)	<0.001
Cardiopathy	4.5 (2.1–9.4)	<0.001	7.2 (2.9–17.8)	<0.001
Neurological disorders	2.1 (1.1–3.9)	0.016	10.1 (5.1–20.1)	<0.001
Malnutrition	5.1 (1.9–13.6)	<0.001	0.2 (0.02–2.9)	0.276
Diabetes	3.5 (1.1–11.3)	0.029	0.3 (0.01–4.4)	0.372
Age under 6 months	1.6 (1.1–2.4)	0.013	5.6 (3.5–9.2)	<0.001
Onco–hematologic conditions	2.9 (1.3–6.3)	0.007	11.7 (5.5–24.9)	<0.001
Low birth weight	3.5 (0.7–16.2)	0.114	14.9 (3.3–67.6)	<0.001
Chronic kidney disease	1.9 (0.7–5.5)	0.199	3.2 (0.7–15.1)	0.141
Living in vulnerable neighborhood	0.6 (0.5–0.9)	0.028	3.4 (2.1–5.3)	<0.001

TABLE 5. Clinical Characteristics of MIS-C Cases

MIS-C	**1° Period (*n* = 68)**	**2° Period (*n* = 30)**	***P***
Age (Median; IQR)	6.5 (3.3–9.9)	6.8 (3.3–10.8)	0.981
Age groups			
<1 year	4.4 % (3)	10 % (3)	0.374
1–4 years	29.4 % (20)	33.3 % (10)	
5–9 years	42.6 % (29)	26.7 % (8)	
10–14 years	20.6 % (14)	30 % (9)	
15–18 years	2.9 % (2)	0	
Comorbidities	19 % (13)	23 % (7)	0.786
Respiratory	8.8 % (6)	0	0.173
Immunodeficiency	2.9 % (2)	10% (3)	0.165
Neurological	1.5 % (1)	0	1
Cardiologic	1.5 % (1)	6.6 % (2)	0.221
Renal	1.5% (1)	0	1
Liver	0	3.3 (1)	1
Premature birth	1.5 % (1)	0	1
Obesity	2.9 % (2)	3.3 % (1)	1
Complementary analyses			
Abnormal chest radiograph	27.3 % (12)	39.1 % (9)	0.408
Abnormal CT scan	100 % (6)	50 % (4)	0.085
Treatment			
Supplemental oxygen	27.9 % (19)	13.3 % (4)	0.13
Steroids	57.3 % (39)	63.3 % (19)	0.658
Immune globulin	55.9 % (38)	90 % (27)	<0.001
Intensive care	50 % (30)	20 % (6)	0.007
Mechanical ventilation	22 % (15)	10 % (3)	0.256
Case fatality	1.5 % (1)	6.7 % (2)	0.221

fewer comorbidities than those with non-VOC disease.[19] However, in our study, certain pre-existing conditions were associated with severity, namely, asthma, bronchopulmonary dysplasia, obesity, cardiopathy, chronic neurological disorders, moderate to severe malnutrition, diabetes, age under 6 months and onco-hematological conditions. Other studies also showed patients with comorbidities were at greater risk of severe disease, which rose further when more than one chronic condition was present.[21,22]

During the second period, we also observed lower rates of asymptomatic cases, probably related to changes in testing criteria during pandemia in Argentina. Other factors inherent to the new variants, such as higher transmission and virulence rates, increased reinfection potential, and development of mutations potentially dampening efficacy of natural or vaccine-induced neutralizing antibodies were described around the world.[23] As far as differences in clinical presentation, neurological symptoms, mainly headaches, were more common during this period, probably because patients were older. Respiratory and general symptoms were also prevalent, as observed by other authors in Latin America.[18]

Co-infections with RSV and adenovirus were detected in the second period, those cases were not associated with increased disease severity. Though an extremely low proportion of the cases were tested for other viruses in our study, we consider it important to show this information because surveillance of seasonal respiratory viruses is crucial to assess the clinical progression of COVID-19 in the context of other circulating respiratory pathogens, namely, influenza and RSV. Complementary diagnostic studies were ordered less frequently during variant circulation, probably because protocols had been adapted following severity and healthcare personnel had gained experience with disease management. No significant differences were found between the two periods for results of acute phase reactants or images, nor did the proportion of severe or critical cases, intensive care admissions and case fatality vary significantly. Similar observations were reported in Latin America by Yock et al, and Martins-Filho et al. published results from northeast Brazil that shows a decrease in hospitalization and death for children and adolescents during the period where Gamma and Zeta were predominant.[18,24] Whereas In Germany Meyer et al described

that the highest hospitalization rate was seen during the circulation of the Alpha variant and in China Lin et al found that VOCs were associated with more severe presentations, in particular, Beta and Delta exhibited worse prognosis than Gamma and Alpha.[25,26]

During the circulation of Gamma, Alpha and Lambda variants, a lower prevalence of MIS-C was observed, as well as less occupancy in intensive care units and greater use of immune globulin. Evidence is insufficient to explain these changes, however, acquired experience and use of updated guidelines, such as the Consensus for the Management of MIS-C published by the Argentine Pediatric Society in 2021, probably helped improve management and outcomes.

This study shows that the clinical presentation of COVID-19 varied according to circulating viral variants. It is important to continue assessing the epidemiological and clinical profile of the disease in children, within the context of new variants and after the introduction of vaccines in this age group.

CONCLUSIONS

The clinical spectrum of COVID-19 in Argentina has evolved. With the emergence of new variants, although the number of asymptomatic cases declined, numbers of severe and critical cases, as well as case fatality rates in children, remained unchanged.

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