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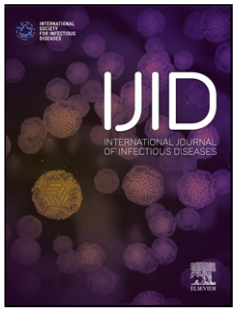

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Juan P. Torres, Giannina Izquierdo, Mirta Acuña, Daniela Pavez, Felipe Reyes, Ana Fritis, Ricardo González, Carolina Ribacova, Verónica Contardo, Lorena I. Tapia

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Multisystem inflammatory syndrome in children (MIS-C): Report of the clinical and epidemiological characteristics of cases in Santiago de Chile during the SARS-CoV-2 pandemic.

Juan P. Torres[1], Giannina Izquierdo[2], Mirta Acuña[3], Daniela Pavez[4], Felipe Reyes[5], Ana Fritis[6], Ricardo González[7], Carolina Ribacova[8], Verónica Contardo[3], Lorena I. Tapia[3,9*]

[1]Department of Pediatrics, Hospital Dr. Luis Calvo Mackenna, Faculty of Medicine, Universidad de Chile, Antonio Varas 360, Providencia, Santiago, Chile

[2]Department of Pediatrics, Hospital Exequiel González Cortés, Faculty of Medicine, Universidad de Chile, José Miguel Carrera 3100, Piso 3, San Miguel, Santiago, Chile

[3]Department of Pediatrics, Hospital Roberto del Río, Faculty of Medicine, Universidad de Chile, Profesor Zañartu 1085, Independencia, Santiago, Chile

[4]Department of Pediatrics, Hospital San Juan de Dios, Faculty of Medicine, Universidad de Chile, Huérfanos 3255, Santiago, Chile

[5]Department of Pediatrics, Hospital Dr. Sótero del Río, Av. Concha y Toro 3459, Puente Alto, Santiago, Chile

[6]Pediatrics Department, Hospital Luis Calvo Mackenna, Antonio Varas 360, Providencia, Santiago, Chile

[7]Pediatric Intensive Care Unit, Hospital Exequiel Gonzalez Cortés, José Miguel Carrera 3300, San Miguel, Santiago, Chile

[8]Pediatric Infectious Disease Unit, Hospital Exequiel Gonzalez Cortés, José Miguel Carrera 3300, San Miguel, Santiago, Chile

[9]Virology Program, ICBM, Faculty of Medicine, Universidad de Chile, Independencia 1027 Pabellón J, Independencia, Santiago Chile

***Corresponding author:** Lorena I. Tapia. Cerro El Cepo 12496, Las Condes, Santiago, Chile.

ltapia@med.uchile.cl Phone/Fax: +56966762691

Highlights

- Multisystem inflammatory syndrome in children affects young Chilean patients
- Gastrointestinal symptoms and altered inflammation parameters predominate
- Although intensive care was needed, favorable clinical outcomes were achieved
- Cases appeared in clusters in Santiago's most vulnerable areas
- Clinical teams must be alert weeks after COVID-19 cases significantly rise

Abstract

Objective: To describe the clinical and epidemiological characteristics of hospitalized children with Multisystem Inflammatory Syndrome in Children (MIS-C) in Santiago, Chile.

Methods: Observational study, on children with MIS-C (May 1- June 24, 2020), in 3 pediatric hospitals in Santiago. Demographics and epidemiologic data; medical history; laboratory tests; cardiologic evaluation; treatment; and clinical outcome were analyzed.

Results: 27 patients (median age 6 (0-14) years) were admitted; 16/27 (59%) required intensive care admission with no deaths. 74% had no-comorbidities, and median days of symptoms before admission was 4 (2-9). Gastrointestinal symptoms were the most frequent, and inflammatory markers were increased at admission. A recent SARS-CoV-2 infection was detected in 82% of cases. The severe group showed significantly lower hemoglobin and albumin, decreased platelet counts, and higher D-dimer during evolution. Echocardiography showed abnormalities (myocardial, pericardial, or coronary) on 12 patients (46%) during hospital stay. Anti-inflammatory treatment (immune globulin and/or corticosteroids) was prescribed in 24 patients. MIS-C appeared in clusters weeks after the peak of SARS-CoV-2 cases, especially in Santiago's most vulnerable areas.

Conclusions: We describe the first series, of 27 children with MIS-C, in a Latin-American country with favorable clinical outcomes. Education and alerts are required for clinical teams to establish an early diagnosis and prompt treatment.

Key words: MIS-C multisystem inflammatory syndrome in children, SARS-CoV-2, COVID-19

Introduction

A novel coronavirus, the Severe Acute Respiratory Syndrome Coronavirus−2 (SARS-CoV-2) was described in December 2019 in China (Zhu et al. 2020). The virus has rapidly spread to almost every country in the world, causing more than 12 million confirmed cases of coronavirus disease 2019 (COVID-19) and over 500,000 deaths the first week of July 2020 (Coronavirus Resourse Center 2020). Severe pneumonia with acute respiratory failure is the most common adverse outcome of SARS-CoV-2 infection in adults (Wu and McGoogan 2020). Children are less infected by the virus compared to other age groups, and most of them are asymptomatic or exhibit mild symptoms (Castagnoli et al. 2020; Dong et al. 2020; Xia et al. 2020).

Recently, pediatricians from Europe (Riphagen et al. 2020; Verdoni et al. 2020; Whittaker et al. 2020) and North America (Kaushik et al. 2020) placed a warning related to hospitalizations of critically ill children presenting with circulatory shock and a hyperinflammatory state, sharing features with other pediatric inflammatory conditions including Kawasaki disease (KD), toxic shock syndrome (TSS), bacterial sepsis with gastrointestinal symptoms and macrophage activation syndrome (MAS). This experience prompted an alert and guidelines from the Royal College of Paediatrics and Child Health (United Kingdom) (RCPCH 2020) on May 2020, referring to this entity as the "Paediatric Inflammatory Multisystem Syndrome Temporally associated with SARS-CoV-2 (PIMS-TS)". On May 14, the United States Centers for Disease Control (CDC) and the World Health Organization (WHO) named the entity "Multisystem Inflammatory Syndrome in Children" (MIS-C) and described new case definitions (CDC 2020; WHO 2020). Since then, several groups have reported a series of similarly affected children in different regions, albeit not yet from Latin America (Cheung et al. 2020; Feldstein et al. 2020; Licciardi et al. 2020).

Chile is a high-income Latin American country (according to the current World Bank classification 2020) with a population of near 19 million inhabitants. As of July 4th, 2020, a total of 330,183 COVID-19 cases had been reported, representing the sixth and third highest incidence rate worldwide and in South America respectively (Coronavirus Resourse Center 2020), with a case fatality rate of 2.2%. Most cases (77%) have been reported in the Metropolitan Region (population near 8 million), where Santiago is situated, of which 4.8% have been children younger than 15 years (Ministry of Health (MINSAL), Chile, 2020). Chilean children, similar to other regions, have had milder symptoms and have been less likely hospitalized when compared to adults, representing less than 5% of the total hospitalization rate (MINSAL 2020). Total cases increased to over 4,000 per day during May (May 20th) and similar to other latitudes (Hennon et al. 2020; Verdoni et al. 2020; Whittaker et al. 2020), pediatricians began to report severe cases of a hyperinflammatory syndrome (MIS-C) in pediatric hospitals of Santiago two to four weeks after the peak of acute infections.

The aim of this study is to describe the epidemiological and clinical characteristics of hospitalized children who met criteria for MIS-C in Santiago, Chile.

Patients and methods

Overall study design. This is an observational, retrospective and prospective study including children less than 15 years of age, with a diagnosis that met the MIS-C definition criteria (Centers for Disease Control and Prevention, USA) (CDC 2020) from May 1st to June 24, 2020, in the three main public pediatric reference hospitals in Santiago, Chile: Hospital Roberto del Río (HRR), Hospital Exequiel González Cortés (HEGC) and Hospital Luis Calvo Mackenna (HLCM). HRR receives patients < 15 years from the north area, HEGC from the south, and HLCM from the eastern area of Santiago (referral population of 160,746; 234,738 and 91,623 patients respectively). The study was approved by the Institutional Review Boards of each institution and by the Ethics Committee for Clinical Investigation in Humans, from the Faculty of Medicine, Universidad de Chile.

After signed informed consent from parents and informed assent from children of 14 years or older, data collection was performed and managed by a researcher at each center, previously trained in data entry, using REDCap electronic data capture tools hosted at the Faculty of Medicine, Universidad de Chile (Harris et al. 2009, 2019). Variables recorded from admission to discharge were extracted from the clinical records assuring anonymity and confidentiality and included: a) demographics: age, gender, nationality; b) medical history for comorbidities e.g. chronic heart or respiratory disease, primary or secondary immunosuppression, diabetes, hypertension, allergies, obesity and cancer. Obesity was defined according to the WHO child growth standards: for infants using weight/age ratio and for children and teens with body mass index (BMI) at or above the 95th percentile according to age and sex (Whitlock et al. 2005) c) physical examination: symptoms/signs at admission: vital signs, weight/height, fever, cough, runny nose, dyspnea, headache, sore throat, vomiting, diarrhea and myalgia; d) laboratory tests:

cell blood counts, C-reactive protein (CRP), procalcitonin, liver function tests, serum creatinine, D-dimer, ferritin, blood cultures and nasopharyngeal sample for viral test: RT-PCR for SARS-CoV-2 and respiratory viruses by direct fluorescent antibody test and/or molecular methods. Rapid serology tests to detect IgM/IgG antibodies against SARS-CoV-2 were performed to confirm the infection (OnSite COVID-19 IgG/IgM Rapid Test, CTK Biotech®, Standard Q COVID-19 IgM/IgG Duo, SD Biosensor ®, COVID-19 IgG/IgM Rapid Test Cassette, Zhejiang Orient Gene Biotech ®) e) images: chest x-ray, chest computed tomography scan, echocardiographic exam, f) clinical outcome variables: length of hospitalization, days of oxygen requirement, use of antimicrobials, use of corticosteroids, intravenous gamma globulin, acetylsalicylic acid, or anticoagulant treatment, admission to the pediatric intensive care unit (PICU), and mortality.

Case definition. The MIS-C definition provided by the Center for disease Control (CDC) of the United States, was used in the study, which considers the following criteria: an individual aged <21 years presenting with fever (temperature $\geq$ 38.0 ° C for $\geq$24 hours, or report of subjective fever lasting $\geq$24 hours), laboratory evidence of inflammation (including, but not limited to, one or more of the following): an elevated CRP, erythrocyte sedimentation rate (ESR), fibrinogen, procalcitonin, D-dimer, ferritin, lactic acid dehydrogenase (LDH), or interleukin 6 (IL-6), elevated neutrophils, reduced lymphocytes and low albumin and evidence of clinically severe illness requiring hospitalization, with multisystem (2 or more) organ involvement (cardiac, renal, respiratory, hematologic, gastrointestinal, dermatologic or neurological); lack of an alternative plausible diagnoses; positivity for current or recent SARS-CoV-2 infection by RT-PCR, serology, or antigen test, or exposure to a suspected or confirmed COVID-19 case within the 4 weeks prior to the onset of symptoms.

Statistical analysis. Demographic and clinical characteristics were described using frequencies or percentages for categorical variables and measures of central trends and dispersion for continuous variables. Clinical characteristics and laboratory findings were compared according to the requirement of intensive care unit admission. Comparisons were performed using $\chi 2$ or Mann-Whitney Rank Sum tests according to data distribution. Statistical analyses were performed using R package and STATA 12 software (College Station, TX), considering a value of $p < 0.05$ as statistically significant.

Results

Clinical variables at admission

A total of 220 pediatric patients with positive SARS-CoV-2 PCR were admitted in the hospitals included in our study between May 8 and June 24, 2020 (HRR= 92; HLCM= 62; HEGC= 66). During this period, 27 cases met MIS-C's definition (CDC 2020): 16 were hospitalized in the HRR, 9 in the HEGC, and 2 in the HLCM (Table 1). According to the national weekly survey -which includes 25 Chilean hospitals and clinics- to date June 28, a total of 42 cases of MIS-C were reported. Thus, the 27 cases included in this study represented 64% of the national casuistic. (2020). The median age was 6 years, and 14 out of 27 cases were male (52%). The nationality of parents was Chilean in 85% of cases. Venezuelan (n=2), Haitian (n=1) and Peruvian (n=1) parents were also registered. A 26% had comorbidities including: overweight or obesity (n=4), asthma (n=1), primary immunodeficiency, GATA 3 deficiency (n=1), prematurity, gestational age of 33 weeks (n=1).

Fever was the first sign in 22 cases (82%), and the median length of symptoms before admission was 4 days (2 to 9 days). Overall, in addition to fever -which is included in the definition of MIS-C- the most common clinical presentations were gastrointestinal disorders: diarrhea (63%) and abdominal pain (63%); followed by clinical features of KD which were present in 18 patients. However, although 67% of patients presented at least one KD symptom, only 4 cases met the complete KD criteria. From the 18 patients presenting KD clinical features, 8 cases (44%) required vasoactive drugs, the same proportion that was detected in patients with no KD signs or symptoms (4/9, 44%). Similar clinical presentation was observed between cases that required admission to the PICU, and those who stayed in the basic ward units.

Laboratory tests to confirm SARS-CoV-2 infection included RT-PCR at admission in all patients, and serology in 13 cases. Infection was confirmed in 22 cases (82%): 12 with positive RT-PCR, 8 patients with positive serology, and 2 cases with positive RT-PCR and serology. From the 5 cases with negative SARS-CoV-2 study, 4 had been in close contact with confirmed COVID-19 cases, and 1 with suspected cases (family). After clinical anamnesis, 9 cases (33%) mentioned an epidemiological link with a COVID-19 patient.

At admission, laboratory parameters were compatible with acute inflammation in most children, with increased D-dimer (>1.0 ug/mL) and CRP (>100 mg/L) in 16/20 and 20/27 individuals respectively. Also, lymphopenia (absolute lymphocyte count <1,500 per uL) was detected in 16/27 patients. As shown in Table 1, after comparisons between cases according to the requirement of intensive care admission we found significantly lower albumin in the severe patients.

Clinical course and treatment

More than half of the children (59%) required admission to the pediatric intensive care unit (PICU). In those cases, disease was characterized by lower hemoglobin and albumin levels and platelet counts. Also, higher D-dimer levels were found in patients who required PICU (Table 2).

Antimicrobials were prescribed in 73% and 100% of patients treated in the hospital ward and PICU, respectively (Table 2). Anticoagulation therapy was completed in 18 cases of which 16 received a prophylaxis regimen and 2 treatment doses. Specific anti-inflammatory treatment (including intravenous immune globulin (IGIV) and/or systemic corticosteroids) was given to 24 patients: 12 cases received both (IVIG + corticoids), 7 children only IGIV, and five completed only corticosteroid treatment. From the 17 cases who received corticosteroids, 15 were treated

with methylprednisolone (15/17), 1 with dexamethasone and 1 received hydrocortisone. Additionally, in two cases a cytokine storm syndrome was suspected and interleukin-6 inhibitor (tocilizumab) was administered.

Median hospitalization stay was 12 days for PICU patients and 6 days for children treated in the hospital ward of which 3 patients remain hospitalized at the time of this report. Oxygen support was required in 13 patients (all but one in the PICU), and mechanical ventilation was required in 12 cases. In the latter, duration of MV was a median of 5 days, ranging from 2 to 6. Also, 12 patients required inotropic support in the ICU. No deaths occurred in this group of patients (Table 2).

Echocardiographic evaluation

During the first day from admission, 26 patients were evaluated with echocardiography. Normal findings were achieved in 18 cases, but myocardial dysfunction (e.g. left ventricular systolic function with an ejection fraction below 60%, diastolic dysfunction, or regional wall motion abnormalities) and/or coronary arteries abnormalities (e.g. refringence or increased z-score) were detected in 8 patients (31%) (Table 3). Consecutive echocardiographic evaluations were performed in all patients and abnormalities were detected in 4 additional cases. Thus, a total of 12 patients (12/26; 46%), presented pericardial effusion (3/26; 11%), and/or myocardial dysfunction (4/26; 15%), and/or coronary arteries abnormalities (5/12; 19%): 9 from cases who required PICU, and 3 from the milder group.

Epidemiologic characteristics of SARS-CoV-2 outbreak and MIS-C cases emergence

As shown in Figure 1A, most of the cases (23/27) occurred after the 22nd epidemiological week (after May 30th, 2020), with a similar increase slope to the rise in RT-PCR positivity rate that occurred 4 weeks before. Thus, the positivity of SARS-CoV-2 tests increased from 12% to near 30% between the 18th and 21st weeks and remained higher than 25% for 4 weeks. Moreover, 25 of the 27 MIS-C cases were children from the northern and southern areas in Santiago, who were hospitalized in HRR and HEGC, respectively (Figure 1B). This was coincident with the higher cumulative case rates observed in the northern and southern areas of the Metropolitan Region, as shown in Figure 1C.

Discussion

We report one of the first series of patients from a Latin American country with MIS-C, of which 59% required admission to a PICU with no deaths. MIS-C cases occurred approximately one month after the peak of COVID-19, similar to reports in the northern hemisphere. In France (Belot et al. 2020), a series of 79 confirmed cases of MIS-C were reported 4 to 5 weeks after the peak of COVID-19 cases, as observed in Santiago, Chile. In addition, two main clusters were observed, one in the north and the other in the south of Santiago, areas with the most vulnerable populations. The first report of a series of cases of multisystemic inflammatory syndrome in Latin America comes from Brazil. In ten children, no mortality was observed, they had a length of stay in the PICU of 5.5 days and only two of them were treated with corticosteroids and only one required invasive mechanical ventilation (Prata-Barbosa et al. 2020). Another study that includes some Latin American countries (CAKE study) has reported preliminary results in 17 children admitted to the PICU in Chile and Colombia (González-Dambrauskas et al. 2020).

The children in our series had a relatively late consultation with the emergency department after the onset of MIS-C symptoms (median of 4 days), which reinforces the need to educate both parents and health teams on early diagnosis of the diseases. The median duration of hospitalization was 9 days (IQR 6-13.5) and the most frequent clinical presentation was fever, abdominal pain and features compatible with incomplete KD, similar to reports in Europe (Toubiana et al. 2020) and the United States (Feldstein et al. 2020). There were no deaths in our series, possibly due to the limited number of children, and/or the high index of suspicion within the health team due to MIS-C alerts coming from the northern hemisphere. Likewise, in our cases, 59% of the children required admission to the PICU, slightly lower than reported in the USA (Feldstein et al. 2020) and France (Belot et al. 2020; Toubiana et al. 2020), which showed a

range of 67 to 81%, respectively. The median age of 6 years in our population is similar to other reports (Belot et al. 2020; Whittaker et al. 2020), as is the occurrence of gastrointestinal symptoms, such as diarrhea and abdominal pain, which have been most common, in addition to fever (Feldstein et al. 2020; Whittaker et al. 2020).

MIS-C is increasing during the winter months in Chile (MINSAL 2020), and the possible role of co-circulation of other respiratory viruses (Kim et al. 2020) is unknown. To date, more than 60 cases of MIS-C have been reported in Chile, several are ongoing, which may be reflecting an increase of episodes; incidence rates cannot yet be determined.

MIS-C is an emerging disease (Verdoni et al. 2020) of unknown long-term impact and sequelae, especially related to coronary and or neurological disorders. In addition, suitable biomarkers for better management and monitoring of the disease are currently unknown. D-dimer, troponin, or interleukin-6 in serum can increase in MIS-C as in other non-infectious and infectious diseases, and specific cut-off values for MIS-C are unknown. Early suspicion, especially in developing countries, is critical for prompt and timely care to achieve a favorable clinical outcome. In Latin America, ethnicity might be determining higher incidence rates of MIS-C. In the USA (Feldstein et al. 2020; Godfred et al. 2020), 31-40% of cases occurred in children of Hispanic ethnicity, and in France (Belot et al. 2020), 11/21 (57%) of MIS-C cases had African ancestry. According to Belot et al., based on 108 children with confirmed, probable, and possible cases, MIS-C incidence rates would be less than two per 10,000 children. In the echocardiographic study, a cardiac compromise was found in 12 cases, and 5/27 (18%) children presented coronary arteries anomalies, slightly higher than that reported in US series that describe 8-14% of these findings (Feldstein et al. 2020; Whittaker et al. 2020).

Most children in our series received intravenous immunoglobulin and corticosteroids, observing a relatively rapid positive response. Similar responses have been reported in France and the US, with universal use of intravenous immunoglobulin and 77%, and use of corticosteroids of 48% and 49%, respectively (Feldstein et al. 2020; Toubiana et al. 2020). Only three of our patients (11%) received a second dose of intravenous immunoglobulin and an increase in steroid dose. In other series, tocilizumab has been used (Kaushik et al. 2020; Nakra et al. 2020), while only two children in our series received this drug.

Our study has limitations. We included roughly half of the cases reported to date in Chile, and several remain hospitalized (and thus lack a definite outcome) or are in the process of data collection. Furthermore, sequelae cannot be established as long-term follow-up with pediatric, cardiac, and neurological evaluations are needed. Underreporting is possible as MIS-C is not mandatory reporting, and there are no active or passive surveillance strategies. MIS-C can be seen in children and adolescents; in our study we included children only up to 14 years of age, since in the three pediatric hospitals in the study, 15 years is the age limit for hospitalization. Thus, cases that occurred in older adolescents were not considered. We mainly included an echocardiogram to assess cardiac involvement. Data on cardiac biomarkers such as troponin and B-type natriuretic peptide (BNP) were available only in few children, as well as the study of possible arrhythmias. It would have been interesting to have a more extensive cardiological study. The serial assessment for the detection of SARS-CoV-2 and its immune response (IgM, IgG) would have been desirable in all cases; however, this was not carried out in all patients, although it was done at patient admission. Finally, with the number of cases in our series, we cannot advance treatment recommendations for MIS-C.

In conclusion, we describe the first series, of twenty-seven children with MIS-C, in a Latin American country, occurring during the autumn-winter season several weeks after the SARS-CoV-2 peak of cases. Episodes tended to occur within geographic clusters in the urban area of Santiago. Most children (60%) required PICU admission, and all had a favorable clinical outcome. During this pandemic, it will be relevant to emphasize in the health teams the early diagnosis and timely management of MIS-C in children.

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Ethical Approval

This study was approved by the Institutional Review Boards of each institution and by the Ethics Committee for Clinical Investigation in Humans, from the Faculty of Medicine, Universidad de Chile.

Conflict of interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper

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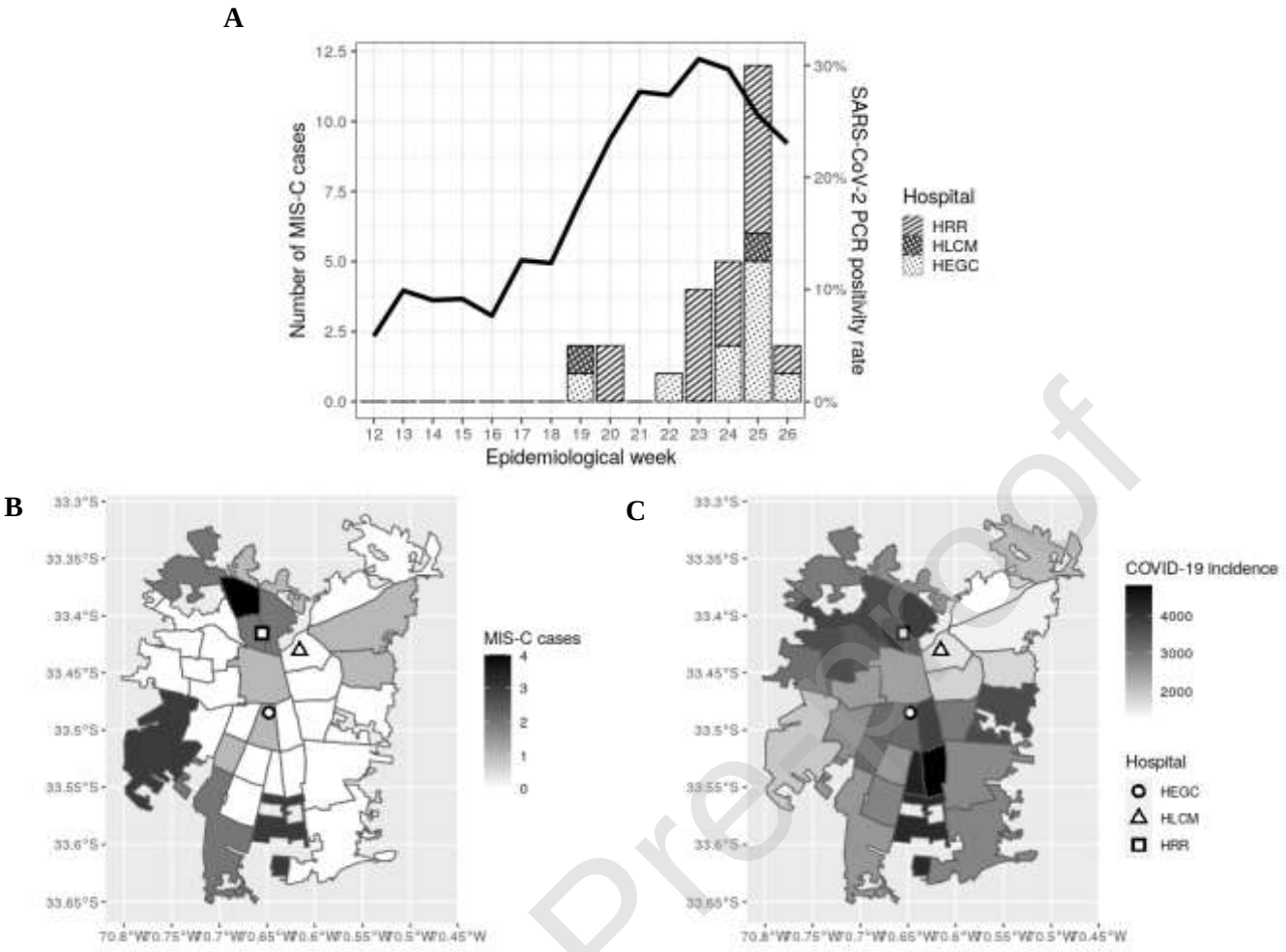

Figure 1. Epidemiological characteristics of SARS-CoV-2 outbreak and MIS-C cases in children from Santiago, Chile. A. Number of cases admitted in Hospital Roberto del Río (HRR), Hospital Luis Calvo Mackenna (HLCM) and Hospital Exequiel Gonzalez Cortés (HEGC) during May and June, 2020 and RT-PCR positivity rate in the three laboratories of references for those Children's Hospitals. B. MIS-C cases in the urban area of Santiago, Chile. Administrative counties inside Santiago are shown as subdivisions. The Children's Hospitals admit patients according to regional distribution: HRR from the North area, HLCM from east area and HEGC from the southern area. C. Case cumulative rate of COVID-19 cases in the urban area of Santiago, Chile. Each administrative county inside Santiago (shown as

subdivisions) reports the daily number of cases, and the numbers are available at https://github.com/MinCiencia/Datos-COVID19/.

Demographic and clinical characteristics at admission - n (%)	All patients	Ward Unit	Intensive Care Unit

	n = 27	n = 11	n = 16
Age in years [&]	6 (0 - 14)	6 (0-13)	6.5 (0-14)
Male sex	14 (52)	5 (45)	9 (56)
No comorbidities	20 (74)	8 (73)	12 (75)
Days of symptoms at admission [&]	4 (2 - 9)	5 (2 - 7)	2 (2- 9)
Fever	27 (100)	11 (100)	16 (100)
Abdominal pain	17 (63)	7 (64)	10 (62)
Diarrhea	17 (63)	6 (55)	11 (69)
Vomiting	13 (48)	6 (55)	7 (44)
Rash	14 (52)	5 (45)	9 (56)
Conjunctival injection	13 (48)	6 (55)	7 (44)
Oral mucosal changes	11 (41)	4 (36)	7 (44)
Cough	7 (26)	3 (27)	4 (25)
Peripheral extremity changes	7 (26)	3 (27)	4 (25)
SARS-CoV-2 Test Results – n (%)			
Positive nasopharyngeal RT-PCR	14 (52)	7 (64)	7 (44)
Positive Serology	10 (77)^	2 (100)	8 (73)
History of COVID-19 (+) contact	9 (33)	5 (45)	4 (25)
Laboratory tests at admission - median (IQR)			
Hemoglobin g/dL	11.5 (10.7-12.7)	11.6 (10.3 - 12.7)	11.4 (10.8 - 12.7)
WBC cells/uL	10.3 (7.5 - 15.1)	10.5(7.5 - 19.3)	10.3 (7.4 – 13.6)
Absolute lymphocyte count (per uL)	1,275 (649 - 1,738)	1,515 (762 - 4,257)	903 (574 - 1,650)
Platelets (thousands/mm3)	182 (114 - 240)	202 (149 - 281)	150 (81- 224)
C-reactive protein (mg/L)	169 (88 - 301)	126 (56 - 202)	184 (137 - 306)
D-Dimer (ug/mL)	1.77 (1.15 – 3.17)	1.26 (0.62 – 2.16)	2.35 (1.42 – 4)
Albumin (g/L)*	3.1 (2.7 - 3.6)	3.5 (3.3 - 3.9)	2.9 (2.6 - 3.2)
Ferritin (ng/mL)^^	316 (111 -5 42)	221 (158 – 622)	431 (111 – 542)

	All patients	Ward Unit	Intensive Care Unit

Table 1. Demographics, clinical characteristics and laboratory parameters of Chilean children with MIS-C.

RT-PCR: reverse transcriptase-polymerase chain reaction; COVID-19: coronavirus disease 2019; IQR: interquartile range (p25-p75); WBC: white blood cells.

& Median (min-max) *Statistical significance = $p < 0.05$

^ Serology test performed on 13 patients (2 from Basic Ward Unit and 11 from PICU). ^^Ferritin at admission on 10 patients.

	n = 27	n = 11	n = 16
Laboratory Results^ – median (IQR)			
Hemoglobin g/dL*	9.4 (8.4 - 10.9)	10.9 (9.8 – 12.5)	8.7 (8.2 - 9.5)
WBC cells/uL	12,4 (5,8 – 19,8)	12,4 (5,8 – 19,3)	13,5 (5,7 – 20,3)
Absolute lymphocyte (per uL)	1,309 (644 - 1,825)	1,662 (644 - 2,293)	912 (591 - 1,632)
Platelets (thousands/mm3)*	153 (123 - 240)	202 (150 - 341)	130 (75 - 160)
C-reactive protein (mg/L)	173 (127 - 275)	132 (60 - 202)	227 (135 - 301)
D-Dimer (ug/mL)*	3.61 (1.42- 5.0)	1.93 (0.62 - 2.16)	4.08 (3.61 – 5.25)
Albumin (g/L)*	2.3 (2.1 - 3.2)	3.3 (2.9 - 3.6)	2.2 (2 - 2.3)
Ferritin (ng/mL)	309 (156 - 696)	230 (156 - 298)	542 (135 - 835)
Treatment – n (%)			
Antibiotic treatment *	24 (89)	8 (73)	16 (100)
Acetylsalicylic Acid *	17 (63)	4 (36)	13 (81)
Anticoagulation therapy (LMWH)	18 (67)	6 (55)	12 (75)
Intravenous Immune Globulin *	19 (70)	5 (45)	14 (87)
Systemic corticosteroids *	17 (63)	4 (36)	13 (81)
Clinical outcome – n (%)			
Days of hospitalization [#] *	9 (6 - 13)	6 (4 - 9)	12 (11 - 17)
Oxygen *	13 (48)	1 (9)	12 (75)
Invasive mechanical ventilation*	12 (44)	0 (0)	12 (75)
Vasoactive drugs *	12 (44)	0 (0)	12 (75)
Death	0 (0)	0 (0)	0 (0)

Table 2. Laboratory findings, treatment throughout hospitalization and outcomes of Chilean children with MIS-C.

IQR: interquartile range (p25-p75); WBC: white blood cells; LMWH: Low molecular weight heparin.

^ Includes the most abnormal laboratory test value.

[#] median, IQR. ***** Statistical significance = $p < 0.05$.

	n (%)
Echocardiography at admission *	26 (96)
· Normal	18 (69)
· Myocardial dysfunction	4 (15)
· Coronary abnormalities	3 (12)
· Myocardial and coronary abnormalities	1 (4)
Abnormal echocardiography throughout hospitalization	12 (46)

Table 3. Echocardiography findings at admission and throughout hospitalization of 27 Chilean children with MIS-C.

*Echocardiography during the first 24 hours from admission.