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RECURSOS DE INFORMACIÓN

Este número incluye:

- Coronavirus: centro de información para profesionales y pacientes
- COVID-19: National Institutes of Health

Doi: 10.1016/j.otsr.2021.103088

Abstract

Introduction: Lockdown involved strict confinement of children at home, radically affecting their way of life, with increased risk of domestic accidents and the temptation to step outside of the legal framework. The aim of the present study was to analyze the impact of lockdown on pediatric emergency turnover in a university reference center situated in a high-risk "red zone" and to describe specific management measures.

Hypothesis: Pediatric emergency turnover and the corresponding lesion mechanisms were altered by lockdown.

Materials and methods: All children undergoing emergency orthopedic surgery during lockdown (group 1) were prospectively included, then retrospectively compared to series operated on during the same period in the previous 3 years. Demographic and surgical data were analyzed, and the pathway changes that were developed were detailed.

Results: Turnover fell by a mean 33.5%, without change in indications. The most frequent lesions were wounds (54.3%), followed by fractures (34.3%) and infections (11.4%); the upper limbs were involved in 84.6% of cases. Lockdown had been infringed in 9.7% of traumas, mainly concerning fractures (55%). Postoperative management was modulated during lockdown in 34% of cases, without complications at the time of writing.

Discussion: Pediatric emergency turnover decreased, without major change in lesion mechanisms. Accidents associated with lockdown infringement were rare (<10%), demonstrating good adaptation on the part of these children living in an urban area. The adapted care pathway was beneficial, and will no doubt continue to optimize management in future, with accelerated circuits and use of telemedicine.

Level of evidence: IV, comparative retro-prospective study.

Doi: 10.1007/s00381-021-05375-6

Abstract

Multisystem inflammatory syndrome in children (MIS-C) is a novel syndrome of multisystemic inflammation affecting children. This case report documents an exceptional and severe complication of an epidural hematoma in a 3-year-old boy under the treatment of MIS-C. During the course of the disease, the patient suffered from a hypocoagulable state and an extensive multisegmental epidural hematoma in the cervical spinal canal. This led to severe anterior spinal cord compression and tetraparesis. Extensive emergency surgery had to be carried out to reverse rapid clinical deterioration.

Doi: 10.2147/jaa.s326860

Abstract

Background: Most asthma exacerbations are caused by viral respiratory infections such as rhinovirus, coronaviruses, influenza viruses, and many others. While there have been data about the impact of COVID-19 on adult asthma, much remains unknown about the impact of COVID-19 on childhood asthma.

Methods: This retrospective cohort study included all pediatric patients aged 2 to 12 years who were admitted to Abha Maternity and Children Hospital for acute asthma exacerbation between June 1, 2020, and May 31, 2021, and underwent testing for SARS-CoV-2 using nasopharyngeal real-time polymerase chain reaction.

Results: Sixty children hospitalized with the diagnosis of asthma were included in the study. Out of these patients, 10 (16.7%) were diagnosed with COVID-19. The enrolled patients were between 2 and 12 years, with a median age of five years (interquartile range, 3.8), and 58% were males (35/60). Cough, shortness of breath, and hypoxia were the most common presenting symptoms and signs. Severe asthma was more prevalent among positive COVID-19 compared with negative COVID-19 patients (60 vs 20%; P= 0.016). In addition, chronic asthma for more than five years was more prevalent among positive COVID-19 than negative COVID-19 patients (60 vs 40%, P= 0.305). Fifty-five percent of the enrolled patients had eosinophilic asthma using a 300cells/μL threshold. None of the children required invasive respiratory support (ventilation through an endotracheal tube or tracheostomy), but 12 patients (21.7%) required respiratory support via high-flow nasal cannula. The total days of hospitalization in either PICU or pediatric general ward did not differ between the two groups. All patients were discharged, and there were no reports of serious morbidity or mortality.

Conclusion: Eosinophilic asthma was the most prevalent asthma phenotype in the study group. Furthermore, there was no difference in the presenting symptoms of an asthma flare-up, laboratory indicators, and hospitalization outcomes (critical care admission and hospital stay) between asthmatics with and without a COVID-19 diagnosis.


Doi: 10.1590/0037-8682-0318-2021

Letter

Doi: 10.1097/inf.0000000000003309


Doi: 10.33314/jnhrc.v19i2.3569

Abstract

Background: COVID-19 pandemic hit all age group with different presentations and outcome. This study aimed at exploring the clinical characteristics, investigational findings, hospital outcome along with 90 days follow up of COVID-19 infection in children.

Methods: This was longitudinal descriptive study among hospital admitted children with COVID-19 RT-PCR positive during first wave of Pandemic with 90 days telephonic follow up. Demographic and clinical characteristics, comorbidities, SPO2, investigations, need of oxygen , PICU admission, need of ventilator, outcome (improved and discharged, death) and duration of hospital stay were recorded and 90 days telephonic follow up was performed for any illness and hospital admission.

Results: Out of 65 children admitted, male 44 (67.7%) and female 21 (32.3%), median age was 23 months ( IQR 6 days -14 years) with 52( 80.0%) without any comorbid conditions. The common signs were Fever 40(61.5%) vomiting 15 (23.1%) and Cough 11(16.9%).Thirteen (20.0%) children has platelets count less than 150000 and 16 (24.6%) had C - reactive protein Positive .Mean duration of hospital stay 8 days (Range 1 -44 days), 20( 30.8% ) needed oxygen , 20(30.8%) needed Pediatric intensive care unit (PICU)admission and 6 (9.2%), needed ventilator. Forty seven (72.3%) recovered and discharged with death of 6.2% (n=4). Fifty six children (75.4%) has not experienced any problem after COVID -19 and only 2 children needed hospital admission in 90 days telephone follow up.

Conclusions: In the first wave of the pandemic, Respiratory and Gastrointestinal symptoms were common presentation with few Severe and critical cases. Majority had good outcome. Majority has no other related illness till 90 days after discharge.

Doi: 10.3390/microorganisms9091964

Abstract

Background: The SARS-CoV-2 pandemic has involved a severe increase of cases worldwide in a wide range of populations. The aim of the present investigation was to evaluate recent insights about COVID-19 infection in children, infants and pregnant subjects.

Methods: A literature overview was performed including clinical trials, in vitro studies, reviews and published guidelines regarding the present paper topic. A descriptive synthesis was performed to evaluate recent insights and the effectiveness of therapies for SARS-CoV-2 infection in children, infants and pregnant subjects.

Results: Insufficient data are available regarding the relationship between COVID-19 and the clinical risk of spontaneous abortion and premature foetus death. A decrease in the incidence of COVID-19 could be correlated to a minor expression of ACE2 in children's lungs. At present, a modulation of the dose-effect posology for children and infants is necessary.

Conclusions: Pregnant vertical transmission has been hypothesised for SARS-CoV-2 infection. Vaccines are necessary to achieve mass immunity for children and also pregnant subjects.


Doi: 10.1007/s40200-021-00900-5

Abstract

Background: Diabetic ketoacidosis (DKA) is a serious complication of type 1 diabetes. A few studies have reported that COVID-19 is associated with the development of new-onset diabetes. Here, we present an infected child with new onset diabetes leading to DKA.

Case presentation: A 10-year-old patient with respiratory distress admitted to the Emergency Department of our center. The patient's COVID-19 Polymerase Chain Reaction (PCR) test was positive and also biochemical analyses confirmed that he had DKA. Despite standard initial treatments, ketoacidosis remained resistant; hence we prescribed oral bicarbonate (40 cc every 8 h) to treat the patient's refractory acidosis. Due to the patient's improvement, he was discharged after 10 days (7 days in the PICU), receiving outpatient enoxaparin (for a week) and ongoing subcutaneous insulin.

Conclusion: We report an interesting case of a child with COVID-19 infection precipitating presentation with new onset diabetes. Due to refractory acidosis, starting oral bicarbonate treatment after 2 days improved acidosis and tachypnea in the patient. The patient's medical team suggest close biochemical monitoring, prescribing enoxaparin for high level of D-dimer, and ordering oral bicarbonate acidosis persists.

Doi: 10.1002/ppul.25671

Abstract

Introduction: Although prolonged respiratory symptoms following severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection have been described in adults, data are emerging that children also experience long-term sequelae of coronavirus disease 2019 (COVID-19). The respiratory sequelae of COVID-19 in children remain poorly characterized. In this study we describe health data and respiratory findings in pediatric patients presenting with persistent respiratory symptoms following COVID-19.

Methods: This study included patients referred to Pulmonary Clinic at the Children's Hospital of Philadelphia between December 2020 and April 2021 (n = 29). Inclusion criteria included a history of SARS-CoV-2 RNA positivity or confirmed close household contact and suggestive symptoms. A retrospective chart review was performed and demographic, clinical, imaging, and functional test data were collected.

Results: The mean age at presentation to clinic was 13.1 years (range: 4-19 years). Patients had persistent respiratory symptoms ranging from 1.3 to 6.7 months postacute infection. Persistent dyspnea and/or exertional dyspnea were present in nearly all (96.6%) patients at the time of clinic presentation. Other reported chronic symptoms included cough (51.7%) and exercise intolerance (48.3%). Fatigue was reported in 13.8% of subjects. Many subjects were overweight or obese (62.1%) and 11 subjects (37.9%) had a prior history of asthma. Spirometry and plethysmography were normal in most patients. The six-minute walk test (6MWT) revealed exercise intolerance and significant tachycardia in two-thirds of the nine children tested.

Conclusion: Exertional dyspnea, cough and exercise intolerance were the most common respiratory symptoms in children with postacute COVID-19 respiratory symptoms seen in an outpatient pulmonary clinic. Spirometry (and plethysmography when available), however, was mostly normal, and exertional intolerance was frequently demonstrated using the 6MWT.


Doi: 10.1111/pde.14801

Abstract

We describe the cases of two immunocompetent children who developed mucositis with oral, ocular, and genital involvement during acute COVID-19 illness. The pattern of mucosal involvement with no other cutaneous involvement was consistent with reactive infectious mucocutaneous eruption (RIME). No other intercurrent infections or new medications were identified, suggesting that COVID-19 was causative. Both patients noted improvement with systemic corticosteroid therapy.


Resumen
Desde que en marzo de 2020 se declarara la pandemia COVID-19 hemos aprendido muchas cosas del coronavirus SARS-CoV-2, y de su papel en la patología pediátrica.

Los niños se infectan en un porcentaje bastante similar a los adultos, si bien en la mayoría de las ocasiones sufre cuadros leves o asintomáticos. Alrededor de un 1% de infectados precisan hospitalización, menos de un 0,02% precisan cuidados intensivos, y la mortalidad es muy baja y generalmente en niños con comorbilidades. Los cuadros clínicos más habituales son infecciones respiratorias de vías altas o bajas, cuadros gastrointestinales y con mayor gravedad el síndrome inflamatorio multisistémico (MIS-C). La mayoría de los episodios no precisan tratamiento, salvo el MIS-C. El remdesivir se ha empleado generalmente como tratamiento compasivo y aún está por definir su papel.

El recién nacido puede infectarse, si bien la transmisión vertical es muy baja (<1%) y se ha demostrado que el bebé puede cohabitar de manera segura con su madre y recibir lactancia materna. En general las infecciones neonatales han sido leves.

La atención primaria ha soportado una parte muy importante del manejo de la pandemia en pediatría. Se han producido numerosos daños colaterales derivados de la dificultad de acceso a la asistencia y del aislamiento que han sufrido los niños. La salud mental de la población pediátrica se ha visto seriamente afectada. A pesar de que se ha demostrado que la escolarización no ha supuesto un incremento de los contagios, sino más bien todo lo contrario. Es fundamental seguir manteniendo las medidas de seguridad que permitan hacer de las escuelas un lugar seguro, tan necesario no solo para la educación infantil, sino para su salud en general.


Doi: 10.1016/j.clinre.2021.101818

Abstract
Severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) is a well-established respiratory tract pathogen. Recent studies in adults and children have shown an increasing number of patients reporting gastrointestinal manifestations of SARS-CoV-2 infection such as diarrhoea, nausea, vomiting and abdominal pain. SARS-CoV-2 RNA can be detected in faeces for an extended period, even after respiratory samples have tested negative and patients are asymptomatic. However, faecal-oral transmission has not yet been proven. In this article, the latest evidence on gastrointestinal, hepato-biliary, and pancreatic manifestations in children with coronavirus disease-19 and multisystem inflammatory syndrome will be analysed.

Doi: 10.1002/ppul.25700

Abstract

Objective: Few studies have explored the clinical features in children infected with SARS-CoV-2 and other common respiratory viruses, including respiratory syncytial virus (RSV), influenza virus (IV), and adenovirus (ADV). Herein, we reported the clinical characteristics and cytokine profiling in children with COVID-19 or other acute respiratory tract infections (ARTI).

Methods: We enrolled 20 hospitalized children confirmed as COVID-19 positive, 58 patients with ARTI, and 20 age and sex-matched healthy children. The clinical information and blood test results were collected. A total of 27 cytokines and chemokines were measured and analyzed.

Results: The median age in the COVID-19 positive group was 14.5 years, which was higher than that of the ARTI groups. Around one-third of patients in the COVID-19 group experienced moderate fever, with a peak temperature of 38.27 ℃. None of the patients displayed wheezing or dyspnea. In addition, patients in the COVID-19 group had lower white blood cells, platelet counts as well as a neutrophil-lymphocyte ratio. Lower serum concentrations of 14 out of 27 cytokines were observed in the COVID-19 group than in healthy individuals. Seven cytokines (IL-1Ra, IL-1β, IL-9, IL-10, TNF-α, MIP-1α, and VEGF) changed serum concentration in COVID-19 compared with other ARTI groups.

Conclusion: Patients with COVID-19 were older and showed milder symptoms and a favorable prognosis than ARTI caused by RSV, IV, and ADV. There was a low grade or constrained innate immune reaction in children with mild COVID-19.


Doi: 10.1016/j.pcl.2021.05.002

Abstract

A multisystem inflammatory syndrome (MISC) can result from COVID-19 infection in previously healthy children and adolescents. It is potentially life threatening and is treated initially with intravenous immunoglobulin and aspirin but may require anti-inflammatory monoclonal antibody treatment in severe cases. SARS-CoV-2 infection can cause macrophage activation syndrome, chilblains, and flares of existing rheumatologic diseases. The pandemic has led to later presentation of some rheumatologic conditions as parents and patients have avoided health care settings. PubMed and Google scholar have been utilized to review the literature on the rheumatologic conditions resulting from COVID-19 and the current treatment options.

Doi: 10.2174/1573396317666210924121550

Abstract

Background: In pediatric patients, Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) infection has been mostly associated with mild symptoms. However, as in adults, renal involvement has been reported in children and adolescents with Coronavirus Disease 2019 (COVID-19).

Objective: This review aimed to report data about renal involvement in pediatric COVID-19. The focuses were on the pathophysiology of acute kidney injury in Pediatric Inflammatory Multisystem Syndrome Temporally Associated (PIMS-TS) with SARS-CoV-2 and the possible impact of SARS-CoV-2 infection upon kidney function, as well as data concerning patients with previous kidney diseases, including Nephrotic Syndrome and Chronic Renal Disease. The implications for COVID-19 outcome in pediatric patients were also discussed.

Methods: This integrative review searched for articles on renal involvement in pediatric COVID-19 patients. The databases evaluated were PubMed and Scopus.

Results: The emergence of PIMS-TS with SARS-CoV-2 has shown that pediatric patients are at risk of severe COVID-19, with multi-organ involvement and dysfunction. In addition to intense inflammation, several systems are affected in this syndrome, collectively creating a combination of factors that results in acute kidney injury. Several studies have proposed that kidney cells, including the podocytes, might be at risk of direct infection by SARS-CoV-2, as high levels of ACE2, the virus receptor, are expressed on the membrane of such cells. Some cases of glomerular diseases triggered by SARS-CoV-2 infection and relapses of previous renal diseases have been reported.

Further studies are necessary to establish risk factors for renal involvement in pediatric COVID-19 and to predict disease outcome.


Abstract

**Background:** Risk factors for severe outcomes of SARS-CoV-2 infection are not well established in children. We sought to describe pediatric hospital admissions associated with SARS-CoV-2 infection in Canada and identify risk factors for more severe disease.

**Methods:** We conducted a national prospective study using the infrastructure of the Canadian Paediatric Surveillance Program (CPSP). Cases involving children who were admitted to hospital with microbiologically confirmed SARS-CoV-2 infection were reported from Apr. 8 to Dec. 31 2020, through weekly online questionnaires distributed to the CPSP network of more than 2800 pediatricians. We categorized hospital admissions as related to COVID-19, incidental, or for social or infection control reasons and determined risk factors for disease severity in hospital.

**Results:** Among 264 hospital admissions involving children with SARS-CoV-2 infection during the 9-month study period, 150 (56.8%) admissions were related to COVID-19 and 100 (37.9%) were incidental infections (admissions for other reasons and found to be positive for SARS-CoV-2 on screening). Infants (37.3%) and adolescents (29.6%) represented most cases. Among hospital admissions related to COVID-19, 52 (34.7%) had critical disease, 42 (28.0%) of whom required any form of respiratory or hemodynamic support, and 59 (39.3%) had at least 1 underlying comorbidity. Children with obesity, chronic neurologic conditions or chronic lung disease other than asthma were more likely to have severe or critical COVID-19.

**Interpretation:** Among children who were admitted to hospital with SARS-CoV-2 infection in Canada during the early COVID-19 pandemic period, incidental SARS-CoV-2 infection was common. In children admitted with acute COVID-19, obesity and neurologic and respiratory comorbidities were associated with more severe disease.

Doi: 10.1186/s13052-021-01141-1

Abstract

**Background:** The locations where children get exposed to SARS-CoV-2 infection and their contribution in spreading the infection are still not fully understood. Aim of the article is to verify the most frequent reasons for SARS-CoV-2 infection in children and their role in the secondary transmission of the infection.

**Methods:** A case-control study was performed in all SARS-CoV-2 positive children (n = 81) and an equal number of age- and sex-matched controls who were referred to the S. Camillo-Forlanini Pediatric Walk-in Center of Rome. The results of all SARS-CoV-2 nasopharyngeal swabs performed in children aged < 18 years from October 16 to December 19, 2020 were analyzed.

**Results:** School contacts were more frequent in controls than in cases (OR 0.49; 95% CI: 0.3-0.9), while household contacts were higher in cases (OR 5.09; 95% CI: 2.2-12.0). In both cases and controls, school contacts were significantly less frequent, while on the contrary household contacts seemed to be more frequent in nursery school children compared to primary school or middle/high school children. A multivariate logistic regression showed that the probability of being positive to SARS-CoV-2 was significantly lower in children who had school contacts or who had flu symptoms compared to children who had household contacts. Results showed a 30.6% secondary attack rate for household contacts.

**Conclusion:** In our study population, the two most frequent reasons for SARS-CoV-2 infection were school and home contacts. The risk of being positive was 5 times lower in children who had school contacts than in children who had household contacts.


Doi: 10.1111/apa.16134

Abstract

Common symptoms of acute COVID-19 infection include fever, cough, headache, shortness of breath, and anosmia, i.e., partial, or complete loss of smell1. Prior literature reported that COVID-19 patients (50%) developed sudden-onset anosmia prior to respiratory symptoms, thus making this an important symptom2. The aim of this study sought to identify post-COVID-19 related olfactory dysfunction and recovery rates in children and adults in a community with a high incidence of COVID-19 infection.

Doi: 10.1007/s00296-021-05008-w

Abstract

The effects of biological disease-modifying antirheumatic drugs (bDMARDs) in the clinical course of COVID-19 on children with underlying rheumatologic diseases have not been fully demonstrated. To evaluate the course of COVID-19 infection in patients with rheumatic disease receiving bDMARD treatment. This was a retrospective, multicenter study conducted in pediatric patients infected by SARS-CoV-2 and under bDMARDs therapy. The study population consisted of 113 patients (72 female/41 male). The mean age of the patients was 12.87 ± 4.69 years. The primary diagnosis of the cohort was as follows: 63 juvenile idiopathic arthritis, 35 systemic autoinflammatory diseases, 10 vasculitides, and five cases of connective tissue diseases. The mean duration of the primary disease was 4.62 ± 3.65 years. A total of 19 patients had additional comorbid diseases. Thirty-five patients were treated with canakinumab, 25 with adalimumab, 18 with etanercept, 10 with infliximab, nine with tocilizumab, six with rituximab, three with anakinra, and one with abatacept. The median exposure time of the biological drug was 13.5 months. Seventy-one patients had symptomatic COVID-19, while 42 were asymptomatic. Twenty-four patients required hospitalization. Five patients presented with MIS-C. The hospitalized patients were younger and had a shorter duration of rheumatic disease compared to ambulatory patients, although the difference was not statistically significant. Steroid usage, presence of fever, and dyspnea were more common among the hospitalized patients. A worsening in the course of both COVID-19 and current disease was not noticed under bDMARDs, however, to end with a strong conclusion multicentric international studies are required.


Doi: 10.1017/s1047951121004248

Abstract

A young child presented with hepatomegaly, ascites, and bradycardia in the setting of coronavirus disease-2019. Permanent complete atrioventricular block and severe right heart failure were diagnosed. He was treated with surgical epicardial pacemaker implantation. This report is the first description of coronavirus disease-2019-induced permanent complete atrioventricular block in a child.

Doi: 10.1186/s12882-021-02520-w  

Abstract  

**Background:** This is a case report of an asymptomatic SARS-CoV-2 infection associated with new-onset nephrotic syndrome in a pediatric patient. This is the third case of new-onset nephrotic syndrome in children associated with SARS-CoV-2 infection, but is the first case report describing a new-onset nephrotic syndrome presentation in a patient who had asymptomatic COVID-19 infection.  

**Case presentation:** This is a case of a previously healthy 5 year old female who presented with new-onset nephrotic syndrome in the setting of an asymptomatic COVID-19 infection. She presented with progressive edema, and laboratory findings were significant for proteinuria and hypercholesterolemia. She was treated with albumin, diuretics, and corticosteroid therapy, and achieved clinical remission of her nephrotic syndrome within 3 weeks of treatment. Though she was at risk of hypercoagulability due to her COVID-19 infection and nephrotic syndrome, she was not treated with anticoagulation, and did not develop any thrombotic events.  

**Conclusions:** Our case report indicates that SARS-CoV-2 infection could be a trigger for nephrotic syndrome, even in the absence of overt COVID-19 symptoms.


Doi: 10.1111/pde.14821  

Abstract  

BASCULE syndrome, characterized by Bier anemic spots, cyanosis, and an urticaria-like eruption, has been described as a benign vasomotor dermatosis that occurs in the setting of transient tissue hypoxia. It has been postulated that dermal ischemia triggers an exaggerated vasoconstrictive arteriolar reaction, which then causes a paradoxical urticarial rash by an unknown mechanism. In patients with COVID-19, there is evidence of angiocentric inflammation leading to vasoconstriction, endothelial damage, and thrombosis. We present a case of acute-onset BASCULE syndrome appearing after asymptomatic infection with COVID-19. BASCULE syndrome should be considered in the expanding spectrum of dermatologic manifestations associated with COVID-19.

Doi: 10.1016/j.anpedi.2021.07.014

Resumen

Introducción: En la población pediátrica, el COVID-19 suele ser asintomático o leve, pero puede haber casos graves y mortales.

Métodos: Se analizaron datos de los casos de COVID-19 registrados en las bases de datos nacional y regional de la Secretaría de Salud federal de México y la Secretaría de Salud de Ciudad de México para establecer las características clínicas y los factores de riesgo de mortalidad en la población pediátrica. El riesgo de defunción se calculó mediante el método de regresión de riesgos proporcionales de Cox.

Resultados: Las bases de datos nacional y de Ciudad de México, respectivamente, registraban un total de 18 465 (2,8%) y de 5733 (4,2%) de casos confirmados de COVID-19 en menores de 18 años en septiembre de 2020. La edad mediana al diagnóstico fue de 12 años (rango, 0-17). Las diferencias encontradas en los casos registrados a nivel nacional en comparación con los registrados en la Ciudad de México fueron: 12,5% vs. 8,2% de pacientes hospitalizados; 6% vs. 3,5% con diagnóstico de neumonía; 2,4% vs. 1,9% ingresados en cuidados intensivos; 1,3% vs. 0,7% fallecidos. Los factores de riesgo independientes asociados a una probabilidad mayor de defunción fueron el diagnóstico de neumonía, la hipertensión, la obesidad, la inmunosupresión y la intubación.

Conclusiones: En México, el 2,8% del total de casos confirmados COVID-19 se dan en pacientes menores de 18 años, con una mediana de edad de 12 años y una mortalidad del 1,3%. Los factores de riesgo de mortalidad identificados fueron el diagnóstico de neumonía, el ingreso en la UCI, la obesidad, la hipertensión, la inmunosupresión, la diabetes, la enfermedad pulmonar crónica y la patología renal.

Doi: [10.1017/s1047951121004029](https://doi.org/10.1017/s1047951121004029)

Abstract

**Objective:** To describe outcomes of acute coronavirus disease 2019 in paediatric and young adult patients with underlying cardiac disease and evaluate the association between cardiac risk factors and hospitalisation.

**Study design:** We conducted a retrospective single-institution review of patients with known cardiac disease and positive severe acute respiratory syndrome coronavirus 2 RT-PCR from 1 March, 2020 to 30 November, 2020. Extracardiac comorbidities and cardiac risk factors were compared between those admitted for coronavirus disease 2019 illness and the rest of the cohort using univariate analysis.

**Results:** Forty-two patients with a mean age of 7.7 ± 6.7 years were identified. Six were 18 years of age or more with the oldest being 22 years of age. Seventy-six percent were Hispanic. The most common cardiac diagnoses were repaired cyanotic (n = 7, 16.6%) and palliated single ventricle (n = 7, 16.6%) congenital heart disease. Fourteen patients (33.3%) had underlying syndromes or chromosomal anomalies, nine (21%) had chronic pulmonary disease and eight (19%) were immunosuppressed. Nineteen patients (47.6%) reported no symptoms. Sixteen (38.1%) reported only mild symptoms. Six patients (14.3%) were admitted to the hospital for acute coronavirus disease 2019 illness. Noncardiac comorbidities were associated with an increased risk of hospitalisation (p = 0.02), particularly chronic pulmonary disease (p = 0.01) and baseline supplemental oxygen requirement (p = 0.007). None of the single ventricle patients who tested positive required admission.

**Conclusions:** Hospitalisations for coronavirus disease 2019 were rare among children and young adults with underlying cardiac disease. Extracardiac comorbidities like pulmonary disease were associated with increased risk of hospitalisation while cardiac risk factors were not.

Doi: 10.1093/rheumatology/keab730

Abstract

Objectives: Immunosuppressed paediatric patients with rheumatic disease (RD) may be at risk for severe or critical disease related to severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection. Data remain scarce on COVID-19 outcomes in paediatric RD patients. The aim of this study is to determine the seroprevalence of SARS-CoV-2 IgG and to describe COVID-19 outcomes in immunosuppressed paediatric RD patients.

Methods: Patients diagnosed with RD before age 18 and treated with at least one immunosuppressive medication for at least three months were enrolled from a tertiary paediatric rheumatology practice in New York, and also underwent routine SARS-CoV-2 IgG testing from May to November 2020. Five hundred and seventy-one patients were screened and 262 were enrolled. SARS-CoV-2 IgG+ subjects were assessed for symptoms of COVID-19 infection. SARS-CoV-2 PCR results were recorded where available. Demographic, diagnostic, medication, and outcome data were collected.

Results: Of 262 subjects (186 female), 35 (13%) were SARS-CoV-2 IgG+; 17 (49%) had symptoms suggestive of COVID-19. Of 17 patients who had SARS-CoV-2 PCR testing, 11 (65%) were PCR+; seven of whom were IgG+. Most SARS-CoV-2 IgG+ subjects were not PCR tested. The most common symptoms in IgG+ and/or PCR+ subjects were fever, fatigue, and cough. No SARS-CoV-2 IgG+ or PCR+ subject developed severe or critical COVID-19 or required hospitalisation.

Conclusions: This is the first report of clinical outcomes of SARS-CoV-2 infection and seroprevalence of SARS-CoV-2 IgG in a large cohort of paediatric RD patients. Most SARS-CoV-2 IgG+ subjects had no symptoms of COVID-19 infection. Symptomatic subjects all had mild COVID-19 symptoms, suggesting that risk of severe or critical COVID-19 in immunosuppressed paediatric RD patients is minimal.

Doi: 10.1002/ppul.25711

Abstract

Objective: to evaluate the secondary attack rate (SAR) in children and adolescents, contacts of essential activities workers who were infected by SARS-CoV-2; and to describe associated clinical and epidemiological data.

Methods: A cross-sectional study conducted in children and adolescents aged 5 to 19 years of age, that were household contacts of parents and other relatives who were infected by SARS-CoV-2 in the city of Goiânia, Central Brazil, from March to October 2020. Sociodemographic and clinical data were collected from all participants. Nasopharyngeal and oropharyngeal swabs were collected and tested for SARS-CoV-2 RNA using real-time reverse transcription polymerase chain reaction (real time RT-PCR). Factors associated with SARS-CoV-2 infection and SAR were analyzed using Poisson regression.

Results: 267 children and adolescents were investigated. The prevalence of SARS-CoV-2 RNA by the real-time RT-PCR test and/or the presence of COVID-19 associated symptoms (anosmia/ageusia and flu syndrome) was 25.1% (95.0% Confidence Interval [95.0% CI] = 20.3-30.6). More than half (55.1%) of the participants had symptoms. The most prevalent signs or symptoms in positive individuals were nasal congestion (62.7%), headache (55.2%), cough (50.8%), myalgia (47.8%), runny nose (47.8%), and anosmia (47.8%). The Poisson model showed that the following signs or symptoms were associated with SARS-CoV-2 infection: fever, nasal congestion, decreased appetite, nausea, anosmia, and ageusia. Families that had more than one infected adult, in addition to the index case, presented greater transmissibility to children and adolescents.

Conclusions: Our results contribute to the hypothesis that children and adolescents are not important sources of transmission of SARS-CoV-2 in the home environment during a period of social distancing and school closure; even though they are susceptible to infection in the household (around ¼ of our study population).

Doi: 10.1590/s1679-49742021000400001

Abstract

Objective: To analyze self-reported sociodemographic and clinical characteristics among individuals aged 2 to 22 years and possible associations with SARS-CoV-2 infection in Espírito Santo, Brazil.

Methods: This was a serial cross-sectional population-based study carried out from May to June 2020. The COVID-19 positivity rate was assessed by serological testing, and associated factors were assessed using Pearson's chi-square test (5% significance level).

Results: Among 1,693 individuals aged 2 to 22 years, 6.1% tested positive for COVID-19 and, among these, 35.5% did not present any symptoms. Differences were identified between positive and negative cases regarding the number of symptoms (p-value=0.001). Coughing was reported by 40.4% of positive individuals. Only 14.3% sought health care, namely 29.8% among those who tested positive and 13.3% among those who tested negative (p-value=0.001).

Conclusion: The percentage of asymptomatic patients can impact the COVID-19 transmission chain in schools and fuel outbreaks of the disease in schools.


Clinical Notes

Doi: 10.1111/ped.14717

Doi: [10.3390/vaccines9091002](https://doi.org/10.3390/vaccines9091002)

Abstract

Children are unique in the context of the COVID-19 pandemic. Overall, SARS-CoV-2 has a lower medical impact in children as compared to adults. A higher proportion of children than adults remain asymptomatic following SARS-CoV-2 infection and severe disease and death are also less common. This relative resistance contrasts with the high susceptibility of children to other respiratory tract infections. The mechanisms involved remain incompletely understood but could include the rapid development of a robust innate immune response. On the other hand, children develop a unique and severe complication, named multisystem inflammatory syndrome in children, several weeks after the onset of symptoms. Although children play an important role in the transmission of many pathogens, their contribution to the transmission of SARS-CoV-2 appears lower than that of adults. These unique aspects of COVID-19 in children must be considered in the benefit-risk analysis of vaccination. Several COVID-19 vaccines have been authorized for emergency use in adolescents and clinical studies are ongoing in children. As the vaccination of adolescents is rolled out in several countries, we shall learn about the impact of this strategy on the health of children and on transmission within communities.


Abstract

SARS-CoV-2 infection in children is less severe than it is in adults. We perform a longitudinal analysis of the early innate responses in children and adults with mild infection within household clusters. Children display fewer symptoms than adults do, despite similar initial viral load, and mount a robust anti-viral immune signature typical of the SARS-CoV-2 infection and characterized by early interferon gene responses; increases in cytokines, such as CXCL10 and GM-CSF; and changes in blood cell numbers. When compared with adults, the antiviral response resolves faster (within a week of symptoms), monocytes and dendritic cells are more transiently activated, and genes associated with B cell activation appear earlier in children. Nonetheless, these differences do not have major effects on the quality of SARS-CoV-2-specific antibody responses. Our findings reveal that better early control of inflammation as observed in children may be key for rapidly controlling infection and limiting the disease course.

Doi: 10.4414/smw.2021.w30058

Abstract

Background: There has been much discussion about coronavirus disease 2019 (COVID-19) and the virus that causes it, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in children and adolescents, since the pandemic was recognised in early 2020. Understanding their role in this pandemic is important for the development of appropriate prevention measures.

Objective: To summarise evidence about three aspects of SARS-CoV-2 and COVID-19 in children and adolescents: (1) severity of SARS-CoV-2 presentation, (2) risk of SARS-CoV-2 infection and (3) risk of transmitting SARS-CoV-2. METHODS: We searched PubMed and MedRxiv for studies on SARS-CoV-2 and COVID-19 in children and adolescents from January 2020 to 21 January 2021. The electronic search was supplemented by papers found in a manual search or suggested by experts up to 29 March 2021. We included case reports, cross-sectional studies, cohort studies, narrative reviews or viewpoints, systematic reviews and modelling studies. We synthesised the information descriptively and attempted to report findings separately for: infants and small children (0-5 years) who are mostly pre-school; school children (6-12 years) broadly covering primary school years; and adolescents (13-17 years).

Results: Of 2778 screened articles, we included 63 (20 case reports, 18 cross-sectional studies, 8 cohort studies, 6 narrative reviews or viewpoints, 10 systematic reviews and 1 modelling study). Children (≤12 years of age) and adolescents (13-17 years of age) usually present with mild disease, with few requiring intensive care treatment. A minority of children of all ages (<18 years) remains asymptomatic throughout the course of infection. In serological studies, reported symptoms are similar in children with and without SARS-CoV-2 antibodies. Children and adolescents can acquire and transmit SARS-CoV-2. The risks of acquiring and transmitting SARS-CoV-2 seems to increase with age. There was limited information about SARS-CoV-2 variants of concern. Poor reporting of age groups and contextual factors such as levels of community transmission, school closures and other non-pharmaceutical interventions make synthesis of findings across studies difficult.

Conclusions: The clinical presentation and role of children and adolescents in SARS-CoV-2 susceptibility and transmission needs further investigation, particularly with regard to variants of concern. Large, prospective studies that attempt to minimise biases in design, are analysed appropriately and reported comprehensively should be conducted.
Abstract

The causal connection between serum biomarkers and COVID-19 severity or pathogenicity in children is unclear. The aim of this study was to describe clinical and immunological features of children affected by COVID-19. The secondary aim was to evaluate whether these cytokines could predict severity of COVID-19. All children (aged 0-18) admitted to the Pediatric Emergency Department and tested with nasopharyngeal swab for SARS-CoV-2 were recruited and assigned to three groups: COVID-19, other infections, control group. Clinical and laboratory data of these patients, including circulating cytokine levels, were analyzed in three groups. Fever was the most frequent symptom in COVID-19 (67.3%). Neutropenia was found in the COVID-19 group (p < 0.05); no difference was observed for lymphocyte counts in the three groups. Higher levels of IL-6 and TNF-alpha were found in the COVID-19 group compared to other infections and control groups (p = 0.014 and p = 0.001, respectively). Whereas, in the COVID-19 group, no difference was observed as for the same cytokines among sub-groups of different disease severity (p = 0.7 and p = 0.8). Serum levels of IL-6 and TNF-alpha were higher in COVID-19 children than in children with other infectious diseases, but those levels did not correlate with disease severity. Clinical studies in a large pediatric population are necessary to better define the role of the immune-mediated response in SARS-CoV-2 infections in children.

Abstract

Aim: To compare the demographic, clinical, laboratory and radiological parameters of patients with different clinical outcomes (death or discharge) and analyse them to find out the potential predictors for mortality in children hospitalised with SARS-CoV-2 infection.

Methods: Retrospective chart review of all patients less than 18 years of age with laboratory-confirmed SARS-CoV-2 infection and requiring hospital admission between 16 April 2020 and 31 October 2020.

Results: Of 255 children with SARS-CoV-2 infection, 100 patients (median age 62.5 months, 59% males, 70% with moderate to severe disease) were hospitalised, of whom 27 died (median age 72 months, 59% males and 30% severely underweight). The subgroup with comorbidities (n = 14) was older (median age 126 months) and had longer duration of stay (median 10 days). Fever and respiratory symptoms were comparable while gastrointestinal symptoms were more common among non-survivors. Hypoxia at admission (odds ratio (OR) 5.48, P = 0.001), multiorgan dysfunction (OR 75.42, P = 0.001), presence of acute kidney injury (OR 11.66, P = 0.001), thrombocytopenia (OR 4.40, P = 0.003) and raised serum C-reactive protein (CRP) (OR 4.69, P = 0.02) were independently associated with mortality. The median time from hospitalisation to death was 3 days. The deceased group had significantly higher median levels of inflammatory parameters and a higher incidence of complications (myocarditis, encephalitis, acute respiratory distress syndrome and shock).

Conclusions: Hypoxia at admission, involvement of three or more organ systems, presence of acute kidney injury, thrombocytopenia and raised serum C-reactive protein were found to be independently associated with increased odds of in-hospital mortality in children admitted with SARS-CoV-2 infection.

Doi: 10.1111/jpc.15737

Abstract

Objectives: To determine the time to RT-PCR negativity after the first positive RT-PCR test, factors associated with longer time to RT-PCR negativity, proportion of children seroconverting after proven SARS-CoV-2 infection, and factors associated with the lack of seroconversion.

Study design: EPICO-AEP is a multicenter study conducted in Spanish children to assess the characteristics of COVID-19. In a subset of patients, three serial RT-PCR tests on nasopharyngeal swab specimens were performed after the first RT-PCR test, and IgG serology for SARS-CoV-2 antibodies was performed in the acute and follow up (<14 and ≥14 days after diagnosis) phase.

Results: In total, 324 patients were included in the study. Median [IQR] time to RT-PCR negativity was 17 [8-29] days, and 35% of patients remained positive >4 weeks after the first RT-PCR test. The probability of RT-PCR negativity did not differ across groups defined by sex, disease severity, immunosuppressive drugs, or clinical phenotype. Globally, 24% of children failed to seroconvert after infection. Seroconversion was associated with hospitalization, persistence of RT-PCR positivity and days of fever.

Conclusions: Time to RT-PCR negativity was long, regardless of severity of symptoms or other patients' features. This should be considered when interpreting RT-PCR results in a child with symptoms, especially those with mild symptoms. Sero prevalence and post-immunization studies should consider that one in four infected children fail to seroconvert.

Doi: 10.1016/j.ajogmf.2021.100492

Abstract

Background: The exclusion of pregnant women from COVID-19 mRNA vaccine trials raised hesitancy regarding the benefit of vaccination of pregnant women, hence little is known about the vaccine’s efficacy in this population.

Objective: To determine the maternal-neonatal transplacental transfer of SARS CoV-2 antibodies among vaccinated parturient women. A control group of COVID-19 recovered patients was included in order to compare IgG levels between vaccinated and recovered patients.

Study design: A prospective cohort study in a single tertiary medical center in Israel between February and March 2021; parturient women who had been vaccinated with BNT162B2 mRNA vaccine during pregnancy were included and compared to COVID-19 recovered parturient women. SARS CoV-2 IgG antibodies were measured in maternal and cord sera, dried blood spot samples taken from newborns, and breast milk samples. The primary outcome was to determine whether neonatal cord and dried blood spot samples were positive for SARS CoV-2 antibodies and to evaluate transfer ratio defined as cord blood IgG divided by maternal IgG levels.

Results: The study included 64 vaccinated parturient women and 11 parturient women who had COVID-19 disease during pregnancy. All maternal blood sera samples and 98.3% of cord blood sera samples were positive for SARS Cov-2 IgG with median concentrations of 26.1 (IQR 22.0;39.7) and 20.2 (IQR 12.7;29.0) respectively. Similarly, 96.4% of neonatal blood spot samples and all breast milk samples were positive for SARS CoV-2 IgG with median concentrations of 11.0 (IQR 7.2;12.8) and 4.9 (IQR 3.8;6.0), respectively. There was a significant positive correlation between maternal serum levels of SARS CoV-2 IgG and cord blood (R=0.483, p=0.0001), neonatal blood spot (R=0.515, p=0.004), and breast milk levels (R=0.396, p=0.005) of SARS CoV-2 IgG. The median placental transfer ratio of SARS-COV-2 IgG was 0.77. Comparison of vaccinated with recovered COVID-19 patients revealed significantly higher SARS CoV-2 IgG levels in maternal serum and cord blood among vaccinated women (p<0.0001).

Conclusion(s): Our study demonstrated efficient transfer of SARS CoV-2 IgG across the placenta from women vaccinated with BNT162b2 mRNA vaccine during pregnancy to their neonates with positive correlation between maternal serum and cord blood antibody concentrations. In addition to maternal protection against COVID-19, the vaccine may also provide neonatal humoral immunity.

Doi: 10.3390/v13091877

Abstract

The COVID-19 pandemic has hugely impacted global public health and economy. The COVID-19 has also shown potential impacts on maternal perinatal and neonatal outcomes. This systematic review aimed to summarize the evidence from existing systematic reviews about the effects of SARS-CoV-2 infections on maternal perinatal and neonatal outcomes. We searched PubMed, MEDLINE, Embase, and Web of Science in accordance with PRISMA guidelines, from 1 December 2019 to 7 July 2021, for published review studies that included case reports, primary studies, clinical practice guidelines, overviews, case-control studies, and observational studies. Systematic reviews that reported the plausibility of mother-to-child transmission of COVID-19 (also known as vertical transmission), maternal perinatal and neonatal outcomes, and review studies that addressed the effect of SARS-CoV-2 infection during pregnancy were also included. We identified 947 citations, of which 69 studies were included for further analysis. Most (>70%) of the mother-to-child infection was likely due to environmental exposure, although a significant proportion (about 20%) was attributable to potential vertical transmission of SARS-CoV-2. Further results of the review indicated that the mode of delivery of pregnant women infected with SARS-CoV-2 could not increase or decrease the risk of infection for the newborns (outcomes), thereby emphasizing the significance of breastfeeding. The issue of maternal perinatal and neonatal outcomes with SARS-CoV-2 infection continues to worsen during the ongoing COVID-19 pandemic, increasing maternal and neonatal mortality, stillbirth, ruptured ectopic pregnancies, and maternal depression. Based on this study, we observed increasing rates of cesarean delivery from mothers with SARS-CoV-2 infection. We also found that SARS-CoV-2 could be potentially transmitted vertically during the gestation period. However, more data are needed to further investigate and follow-up, especially with reports of newborns infected with SARS-CoV-2, in order to examine a possible long-term adverse effect.


Doi: 10.5546/aap.2021.eng.e531

Abstract

Coronavirus disease 2019 (COVID-19), caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), is the first pandemic of the 21st century. SARS-CoV-2 infection is mainly transmitted via droplets. Although some cases of perinatal transmission have been reported, it is unclear whether these infections occurred via transplacental or transcervical routes or via environmental exposure. Herein, we present the case of a newborn who died with neonatal acute respiratory distress syndrome exhibiting severe pulmonary involvement. The baby was born to a COVID-19 PCR (+) mother by C-section and was found to be COVID-19 PCR (+) from a nasopharyngeal swab sample tested within 24 hours of birth due to the suspected transplacental transmission of SARS-CoV-2 from the mother to the fetus.

Doi: 10.1002/uog.24787

Abstract

Objective: SARS-CoV-2 vertical transmission has been extensively investigated. Recently, the World Health Organization (WHO) published strict criteria to classify the timing of mother-to-child transmission into different categories. The aim of this study was to investigate the possibility of vertical transmission in asymptomatic SARS-CoV-2 positive women.

Methods: We included 42 pregnant women fulfilling the inclusion criteria which presented a positive nasopharyngeal test at 24-48 hours before delivery and had obstetric indication of cesarean section at a Perinatology center in Mexico City. All women were asymptomatic at the time of the test. The newborns had both oral and rectal swabs collected at birth and at 24 hours after birth. Viral detection was carried out by RT-PCR in all samples. Relevant medical information was retrieved from clinical records.

Results: Initially all women were asymptomatic for COVID-19 and 25 (59%) developed mild disease after discharge. Three (7%) neonatal deaths occurred, none of them had a positive SARS-coV-2 test nor COVID-19-related symptoms. There were five cases of intrauterine transmission of SARS-CoV-2, according to the WHO criteria. Our results also showed that performing only one neonatal swab (oral or rectal) may reduce SARS-CoV-2 detection by 40%.

Conclusion: This study contributes with evidence to reinforce the existence of vertical transmission even in asymptomatic patients and highlights the importance of testing more than one sample in newborns to increase the detection rate of SARS-CoV-2.

Doi: 10.3390/brainsci11091222

Abstract

Background: The rapid expansion and severity of the COVID-19 contagion has had negative physical and psychological health implications for millions of people around the world, but even more so among children and adolescents. Given the severity of the situation and the small number of studies on the direct influence of viral infection on the cognitive development within adolescents, the present study aims at understanding the consequences of contracting the virus and being hospitalized in relation to cognitive functioning, in particular, for executive functioning, among adolescents.

Methods: To all subjects included in the sample, divided into four groups based on the severity of the COVID-19 infection, were administered the WISC-IV in order to evaluate the global cognitive functioning, and subsequently, the subtests Courses and Tower of London (ToL), both part of the BVN 12-18, were administered for the evaluation of executive operation.

Results: Our analyses showed that between subjects who did not contract the viral infection and those who contracted it in an asymptomatic form, there are no significant differences in cognitive functioning, but only in executive functioning. Furthermore, in both hospitalized and non-hospitalized subjects, we found lower scores especially for WM skills, while IQ scores are in a medium range.

Conclusion: The present study shows that contracting the viral infection and, thus, being hospitalized, caused greater problems and difficulties as compared to those who were not hospitalized, impacting global cognitive (and executive) functioning, especially the WM. We believe that these results could allow an early detection of alterations in cognitive and executive functioning, a fundamental aspect of the interventions that occur in evolutionary phases such as those related to pre-adolescence, allowing, therefore, the activation of functional recovery pathways in a short time.

Doi: 10.1016/j.jped.2021.08.003

Abstract

Objective: This study aimed to review the literature, summarizing the existing evidence on the effects of the pandemic on children, adolescents and parents, with an emphasis on the psychological, emotional, and sleep quality consequences.

Source of data: Empirical studies identified in the following databases: MEDLINE, ISI Web of Knowledge/Web of Science, and preprint servers.

Synthesis of data: The findings point to a wide range of consequences for children and adolescents resulting from the COVID-19 pandemic, which mainly includes an increase in depressive mood symptoms. There is also an increase in anxiety symptoms, suicidal ideation, as well as potential delays in language and motor development resulting from deprivation of social interaction and the closing of schools. These effects are more severe due to previous neuropsychiatric conditions. For parents, there is an increase in anxiety, depressive and post-traumatic symptoms, which are more accentuated in those who suffered socioeconomic damage due to the pandemic. There was an important increase in situations of violence towards children by parents and caregivers during the pandemic. Also, changes in routine and fear of the pandemic have negatively impacted sleep quality, globally.

Conclusions: It is noteworthy that most studies published to date used a cross-sectional design and applied online screening questionnaires. The few studies with a longitudinal design suggest that these changes may have been transitory and more prevalent at the beginning of the pandemic.

Doi: 10.1186/s12889-021-11805-6

Abstract

Background: The COVID-19 pandemic resulted in public health and policy measures to reduce in-person contact and the transmission of the virus. These measures impacted daily life and mental well-being (MWB). The aims of this study were to explore the MWB impacts of COVID-19 on children and assess the associations among perceived changes in physical activity (PA) and sedentary behaviors (SB), with perceived MWB changes, using a mixed-methods approach.

Methods: A convergent parallel mixed-methods design consisting of an online survey with a convenience sample and interviews was conducted from May through July 2020 with parents/caregivers of kindergarten through 5th graders in the St. Louis region. Survey domains assessed included child MWB, PA, and SB. Interviews were recorded, transcribed, and qualitatively analyzed using a code book developed to elicit themes. Survey data was analyzed with chi-squared tests and logistic regressions. The dependent variable was perceived change in child MWB due to the impact of COVID-19. Independent variables included perceived changes in PA, SB, and child concerns about COVID-19.

Results: Sample size consisted of 144 surveys and 16 interviews. Most parents reported a perceived decrease in child MWB (74%), a decrease in child PA (61%), and an increase in child SB (91%). Discontentment with stay-at-home orders and concern about COVID-19 were associated with a perceived decrease in MWB. Children whose PA decreased were 53% less likely to have the same or better MWB (OR 0.47) and children whose outside PA decreased were 72% less likely to have the same or better MWB (OR 0.28). Common qualitative themes included difficulty in adjusting to COVID-19 restrictions due to school closures and lack of socializing, child concerns about family getting sick, and PA benefits for improving MWB.

Conclusions: Based on parent perceptions, MWB decreased with COVID-19. Maintained or increased child PA improved the chances MWB would remain the same or improve. Parent interviews provide context to these findings by showing how COVID-19 impacted MWB and the associations between PA and MWB. Understanding protective factors for child MWB during COVID-19 is important to offset negative long-term health outcomes from this ongoing pandemic.

Doi: 10.1080/08039488.2021.1970804

Abstract

Purpose: The coronavirus disease 2019 (COVID-19) pandemic has a severe impact on the general population. During the pandemic, children may develop emotional and psychological symptoms, including increased worries about health and illness, known as health anxiety symptoms (HASs). We aimed to explore HAS in 7-9-year-old children from the Danish Odense Child Cohort (OCC) during the first COVID-19 lockdown period in Denmark, and to examine associations with potential risk factors.

Material and methods: OCC is a cohort of children born between 2010 and 2012, which originally recruited 2874 of 6707 pregnancies (43%). Among the current OCC population of 2430 singleton children, 994 participated in this study (response rate 40%). Children and their parents filled out questionnaires about child HAS, family exposure to COVID-19 infection and parental HAS. Adjusted odds ratios (aORs) were calculated between high score child HAS (≥90th percentile) and covariates by use of logistic regression.

Results: Most children (n = 686, 69%) reported few worries about their health. Children reporting high score HAS also had higher levels of internalizing symptoms at age 5; aOR 2.15 (1.20;3.85), p = .010, and higher levels of maternal and paternal HAS; aOR 2.40 (1.44;3.97), p = .001, and 2.00 (1.10;3.65), p = .023, whereas no association with child sex or familial exposure to COVID-19 was detected (n = 65, 6.5%).

Conclusions: High score child HAS during the first lockdown period of the COVID-19 pandemic was not associated with family exposure to COVID-19 infection, but to being a more anxious child a priori and to HAS in parents.


Abstract

Importance: Children's physical activity and screen time are likely suboptimal during the COVID-19 pandemic, which may influence their current and future mental health.

Objective: To describe the association of physical activity and screen time with mental health among US children during the pandemic.

Design, setting, and participants: This cross-sectional survey was conducted from October 22 to November 2, 2020, among 547 parents of children aged 6 to 10 years and 535 parent-child dyads with children and adolescents (hereinafter referred to as children) aged 11 to 17 years and matched down to 500 children per cohort using US Census-based sampling frames. Children aged 11 to 17 years self-reported physical activity, screen time, and mental health, and their parents reported other measures. Parents of children aged 6 to 10 years reported all measures. All 1000 cases were further weighted to a sampling frame corresponding to US parents with children aged 6 to 17 years using propensity scores.

Exposures: Child physical activity, screen time, COVID-19 stressors, and demographics.

Main outcomes and measures: Mental health using the Strengths and Difficulties Questionnaire for total difficulties and externalizing and internalizing symptoms.

Results: Among the 1000 children included in the analysis (mean [SD] age, 10.8 [3.5] years; 517 [52.6%] boys; 293 [31.6%] American Indian/Alaska Native, Asian, or Black individuals or individuals of other race; and 233 [27.8%] Hispanic/Latino individuals), 195 (20.9%) reported at least 60 minutes of physical activity every day. Children reported a mean (SD) of 3.9 (2.2) d/wk with at least 60 minutes of physical activity and 4.4 (2.5) h/d of recreational screen time. COVID-19 stressors were significantly associated with higher total difficulties for both younger (β coefficient, 0.6; 95% CI, 0.3-0.9) and older (β coefficient, 0.4; 95% CI, 0.0-0.7) groups. After accounting for COVID-19 stressors, engaging in 7 d/wk (vs 0) of physical activity was associated with fewer externalizing symptoms in younger children (β coefficient, -2.0; 95% CI, -3.4 to -0.6). For older children, engaging in 1 to 6 and 7 d/wk (vs 0) of physical activity was associated with lower total difficulties (β coefficients, -3.5 [95% CI, -5.3 to -1.8] and -3.6 [95% CI, -5.8 to -1.4], respectively), fewer externalizing symptoms (β coefficients, -1.5 [95% CI, -2.5 to -0.4] and -1.3 [95% CI, -2.6 to 0], respectively), and fewer internalizing symptoms (β coefficients, -2.1 [95% CI, -3.0 to -1.1] and -2.3 [95% CI, -3.5 to -1.1], respectively). More screen time was correlated with higher total difficulties among younger (β coefficient, 0.3; 95% CI, 0.1-0.5) and older (β coefficient, 0.4; 95% CI, 0.2-0.6) children. There were no significant differences by sex.

Conclusions and relevance: In this cross-sectional survey study, more physical activity and less screen time were associated with better mental health for children, accounting for pandemic stressors. Children engaged in suboptimal amounts of physical activity and screen time, making this a potentially important target for intervention.

Doi: 10.1016/j.jad.2021.09.090

Abstract

**Background:** The COVID-19 pandemic has altered daily routines and family functioning, led to closing schools, and dramatically limited social interactions worldwide. Measuring its impact on mental health of vulnerable children and adolescents is crucial.

**Methods:** The Collaborative Outcome study on Health and Functioning during Infection Times (COH-FIT - www.coh-fit.com) is an on-line anonymous survey, available in 30 languages, involving >220 investigators from 49 countries supported by national/international professional associations. COH-FIT has thee waves (until the pandemic is declared over by the WHO, and 6-18 months plus 24-36 months after its end). In addition to adults, COH-FIT also includes adolescents (age 14-17 years), and children (age 6-13 years), recruited via non-probability/snowball and representative sampling and assessed via self-rating and parental rating. Non-modifiable/modifiable risk factors/treatment targets to inform prevention/intervention programs to promote health and prevent mental and physical illness in children and adolescents will be generated by COH-FIT. Co-primary outcomes are changes in well-being (WHO-5) and a composite psychopathology P-Score. Multiple behavioral, family, coping strategy and service utilization factors are also assessed, including functioning and quality of life.

**Results:** Up to June 2021, over 13,000 children and adolescents from 59 countries have participated in the COH-FIT project, with representative samples from eleven countries.

**Limitations:** Cross-sectional and anonymous design.

**Conclusions:** Evidence generated by COH-FIT will provide an international estimate of the COVID-19 effect on children's, adolescents' and families', mental and physical health, well-being, functioning and quality of life, informing the formulation of present and future evidence-based interventions and policies to minimize adverse effects of the present and future pandemics on youth.

Doi: 10.3390/microorganisms9091958

Abstract

SARS-CoV-2 infection may precede and cause various autoimmune and inflammatory diseases, including multisystem inflammatory syndrome in children (MIS-C). Therefore, we aimed to observe the clinical presentation and laboratory, instrumental and other constellations in children with MIS-C, including liver involvement. We present the outcomes from a single-center prospective observational study in which 89 children was included (60 with proven COVID-19, 10 symptomatic with confirmed COVID-19 contact and 19 diagnosed with MIS-C). Laboratory, instrumental, immunological, and clinical investigations were performed. Only 12% (n = 4) from the COVID-19 group (except the ICU cases), we found elevated AST and/or ALT (up to 100). All of the children with elevated transaminase were overweight or obese, presenting along with moderate COVID-19 pneumonia. The majority of children with MIS-C showed typical laboratory constellations with higher levels of IL-6 (120.36 ± 35.56 ng/mL). About half of the children in the MIS-C group (52%, n = 11) showed elevated transaminases. Eleven children (57.9%) presented with abdominal pain, eight (42.1%) with ascites, two (10.5%) with hepatosplenomegaly, and four (21.1%) with symptoms such as diarrhea. Mesenteric lymphadenitis was observed more often in patients with elevated LDH (327.83 ± 159.39, p = 0.077). Ascites was associated with lymphopenia (0.86 ± 0.80, p = 0.029) and elevated LDH. Hepato-splenomegaly was also more frequent in children with lymphopenia (0.5 ± 0.14, p = 0.039), higher troponin (402.00 ± 101.23, p = 0.004) and low ESR. Diarrhea was more frequent in patients with lower CRP (9.00 ± 3.44 vs. 22.25 ± 2.58, p = 0.04), and higher AST and ALT (469.00 ± 349.59 vs. and 286.67 ± 174.91, respectively, p = 0.010), and D-dimer (4516.66 ± 715.83, p = 0.001). Our data suggest that the liver can also be involved in MIS-C, presenting with typical laboratory and instrumental outcomes.

Doi: 10.1002/pbc.29355

Abstract

Objective: To characterize viscoelastic testing profiles of children with multisystem inflammatory syndrome in children (MIS-C).

Methods: This single-center retrospective review included 30 patients diagnosed with MIS-C from March 1 to September 1, 2020. Thromboelastography (TEG) with platelet mapping was performed in 19 (63%) patients and compared to age- and sex-matched controls prior to cardiac surgery. Relationships between TEG parameters and inflammatory markers were assessed using correlation.

Results: Patients with MIS-C had abnormal TEG results compared to controls, including decreased kinetic (K) time (1.1 vs. 1.7 minutes, p < .01), increased alpha angle (75.0° vs. 65.7°, p < .01), increased maximum amplitude (70.8 vs. 58.3 mm, p < .01), and decreased lysis in 30 minutes (Ly30) (1.1% vs. 3.7%, p = .03); consistent with increased clot formation rate and strength, and reduced fibrinolysis. TEG maximum amplitude was moderately correlated with erythrocyte sedimentation rate (ESR) (r = 0.60, p = .02), initial platelet count (r = 0.67, p < .01), and peak platelet count (r = 0.51, p = .03). TEG alpha angle was moderately correlated with peak platelet count (r = 0.54, p = .02). Seventeen (57%) patients received aspirin (ASA) and anticoagulation, five (17%) received only ASA, and three (10%) received only anticoagulation. No patients had a symptomatic thrombotic event. Six (20%) patients had a bleeding event, none of which was major.

Conclusions: Patients with MIS-C had evidence of hypercoagulability on TEG. Increased ESR and platelets were associated with higher clot strength. Patients were prophylactically treated with ASA or anticoagulation with no symptomatic thrombosis or major bleeding. Further multicenter study is required to characterize the rate of thrombosis and optimal thromboprophylaxis algorithm in this patient population.
Abstract

We report three cases of multisystem inflammatory syndrome in children (MIS-C) during July 2020 from a tertiary care hospital with different clinical presentations and course of management. This will guide in better management of children with MIS-C. All three patients, aged 1 to 12 years old, were critically ill. They presented with common features of MIS-C, such as fever, conjunctival congestion, gastrointestinal involvement, and skin manifestations. Clinical features were suggestive of shock, coagulopathy, and multiorgan involvement. Laboratory findings revealed raised inflammatory markers, including C-reactive protein (CRP), erythrocyte sedimentation rate (ESR), and D-dimers (DD). All patients required intensive care with oxygen therapy, fluid resuscitation, inotropic agents, and broad-spectrum antibiotics. All patients received steroids, and two patients were given intravenous immunoglobulin. One patient died, and the remaining two patients were discharged. Our findings confirmed that COVID-19 may cause severe disease in children, and the presentation may vary, requiring early recognition and timely management.

Summary: Multisystemic inflammatory syndrome (MIS-C) can develop as a complication of SARS CoV-2 infection, involving the gastrointestinal system mainly by vasoconstriction, edema, glandular hyperplasia, and a procoagulant state leading to direct tissue injury.

Method: ology: a series of cases including 8 patients with MIS-C treated in two highly complex institutions is presented. These patients, had abdominal symptoms of surgical management.

Results: The average age was 9.5 years and the most frequent symptoms were fever, abdominal pain, diarrhea (100%); in addition, 87.5% presented shock. The diagnosis of SARS CoV-2 was confirmed by RT-PCR test in 37.5%, antigen 12.5% and the rest of the patients showed IgM and IgG antibodies. In laboratories, the increase in acute phase reactants, Erythrocyte Sedimentation Rate (ESR), C-reactive protein, procalcitonin, as well as troponin, D dimer and proBNP, is highlighted. The surgical outcome documented 2 patients with a normal appendix, 3 patients with edematous appendicitis, and 3 patients with complicated appendicitis.

Conclusions: patients with MIS-C display abdominal symptoms similar to those present in surgical emergencies and a non-negligible number of cases require surgical exploration. This condition poses a new differential diagnosis to the surgical abdomen in pediatric patients.

Doi: 10.1007/s00246-021-02712-z

Abstract

Multisystem inflammatory syndrome in children is a term that encompasses the systemic inflammation seen in children 4-6 weeks following COVID-19 infection. Cardiac involvement is common in this condition and can range from mild myocarditis to severe hypotension and cardiogenic shock, but not all patients display overt cardiac symptoms. We present three such patients who presented with a variety of systemic inflammatory symptoms but lacked apparent cardiac symptoms, and all had normal left ventricular ejection fraction but reduced global longitudinal strain (GLS). GLS is a cardiac tissue deformation index measured by Echocardiography to detect early changes in global function even before changes in ejection fraction are seen. We suggest this finding may indicate subclinical myocardial injury and stress the need for closer evaluation and follow-up for these patients as well as further research on both the short- and long-term effects of COVID-19 on cardiac function in the pediatric population.


Doi: 10.1007/s00246-021-02738-3

Abstract

Cardiac involvement is a common and serious problem in multisystem inflammatory syndrome in children (MIS-C). Echocardiographic evaluation of systolic and diastolic function by traditional, tissue Doppler and three-dimensional (3D) echocardiography was performed in consecutive 50 MIS-C patients during hospitalization and age-matched 40 healthy controls. On the day of worst left ventricular (LV) systolic function (echo-1), all left and right ventricular systolic function parameters were significantly lower (p < 0.001), E/A ratio was significantly lower, and averaged E/e' ratio was significantly higher (median 1.5 vs. 1.8, p < 0.05; 8.9 vs. 6.3, p < 0.001 respectively) in patients compared to control. Patients were divided into 2 groups according to 3D LV ejection fraction (LVEF) on the echo-1: Group 1; LVEF < 55%, 26 patients, and group 2; LVEF ≥ 55%, 24 patients. E/e' ratio was significantly higher in group 1 than group 2 and control at discharge (median 7.4 vs. 6.9, p = 0.005; 7.4 vs. 6.3, p < 0.001 respectively). Coronary ectasia was detected in 2 patients (z score: 2.53, 2.6 in the right coronary artery), and resolved at discharge. Compared with group 2, group 1 had significantly higher troponin-I (median 658 vs. 65 ng/L; p < 0.001), NT-pro BNP (median 14,233 vs. 1824 ng/L; p = 0.001), procalcitonin (median 10.9 vs. 2.1 μg/L; p = 0.009), ferritin (median 1234 vs. 308 μg/L; p = 0.003). The most common findings were ventricular systolic dysfunction recovering during hospitalization, and persisting LV diastolic dysfunction in the reduced LVEF group at discharge. Coronary artery involvement was rare in the acute phase of the disease. Also, in MIS-C patients, the correlation between LV systolic dysfunction and markers of inflammation and cardiac biomarkers should be considered.

Abstract

This study sought to evaluate the candidacy of plasma osteopontin (OPN) as a biomarker of COVID-19 severity and multisystem inflammatory condition in children (MIS-C) in children. A retrospective analysis of 26 children (0-21 years of age) admitted to Children's Healthcare of Atlanta with a diagnosis of COVID-19 between March 17 and May 26, 2020 was undertaken. The patients were classified into three categories based on COVID-19 severity levels: asymptomatic or minimally symptomatic (control population, admitted for other non-COVID-19 conditions), mild/moderate, and severe COVID-19. A fourth category of children met the Centers for Disease Control and Prevention's case definition for MIS-C. Residual blood samples were analyzed for OPN, a marker of inflammation using commercial ELISA kits (R&D), and results were correlated with clinical data. This study demonstrates that OPN levels are significantly elevated in children hospitalized with moderate and severe COVID-19 and MIS-C compared to OPN levels in mild/asymptomatic children. Further, OPN differentiated among clinical levels of severity in COVID-19, while other inflammatory markers including maximum erythrocyte sedimentation rate, C-reactive protein and ferritin, minimum lymphocyte and platelet counts, soluble interleukin-2R, and interleukin-6 did not. We conclude OPN is a potential biomarker of COVID-19 severity and MIS-C in children that may have future clinical utility. The specificity and positive predictive value of this marker for COVID-19 and MIS-C are areas for future larger prospective research studies.


Abstract

Multisystem inflammatory syndrome in children is a previously unrecognized and potentially catastrophic illness that appears in children who have been exposed to or diagnosed with COVID-19. As healthcare agents and members of the community, nurses are positioned to assist in identifying children who may experience previously unrecognized complications of infection from the SARS-CoV-2 virus.

Doi: https://doi.org/10.1002/ppul.25687

Abstract

Multisystem inflammatory syndrome in children (MIS-C) associated with coronavirus disease 2019 (COVID-19) has been described to partially overlap with Kawasaki disease (KD) with regard to clinical symptoms, but they are unlikely to share the same disease entity. We conducted a systematic review and meta-analysis to characterize the laboratory parameters of MIS-C compared with those of KD and Kawasaki disease shock syndrome (KDSS). Databases were searched for studies on laboratory parameters of MIS-C (hematology, inflammatory markers, cardiac markers, and biochemistry) through May 31, 2021. Twelve studies with 3073 participants yielded 969 MIS-C patients. In terms of hematology, MIS-C patients had lower levels of leukocytes, absolute lymphocyte count and platelet count (PLT) than KD patients and had similar absolute neutrophil count (ANC) and hemoglobin (Hb) levels. In terms of inflammatory markers, MIS-C patients had higher levels of C-reactive protein, D-dimer and ferritin than KD patients and had similar levels of procalcitonin and erythrocyte sedimentation rate (ESR). In terms of cardiac markers, MIS-C patients had higher CPK levels than KD patients. The levels of N-terminal pro-brain natriuretic peptide, troponin and aspartate aminotransferase were not significantly different between MIS-C and KD patients. In terms of biochemistry, MIS-C patients had lower levels of albumin, sodium and alanine aminotransferase and higher levels of creatinine than KD patients. In addition, MIS-C patients had lower levels of PLT, Hb and ESR and higher levels of ANC than KDSS patients. Measurement of laboratory parameters might assist clinicians with accurate evaluation of MIS-C and further mechanistic research.


Doi: 10.1007/s11886-021-01602-3

Abstract

Purpose of review: To review the spectrum of cardiac manifestations and treatments of multisystem inflammatory syndrome in children (MIS-C) associated with coronavirus disease 2019 (COVID-19).

Recent findings: Studies demonstrate that up to 80% of children with MIS-C may have cardiac involvement on a spectrum of severity. Cardiac manifestations include myocarditis, coronary artery aneurysms, conduction abnormalities, and arrhythmias. Current treatments, including inotropic support, immunomodulatory therapy, and anti-coagulation, have been effective at resolving these cardiac findings in the majority of patients. COVID-19 can also cause myocarditis in the acute stage of illness and recent descriptions of COVID-19 vaccine myocarditis have occurred. Cardiac manifestations are common in MIS-C and should be assessed for at presentation and during the clinical course as indicated.

Doi: [10.1002/eji.202149556](https://doi.org/10.1002/eji.202149556)

**Abstract**

The immunopathogenesis of multisystem inflammatory syndrome (MIS-C) in children that may follow exposure to SARS-CoV-2 is incompletely understood. Here, we studied SARS-CoV-2-specific T cells in MIS-C, Kawasaki disease (KD), and SARS-CoV-2 convalescent controls using peptide pools derived from SARS-CoV-2 spike or non-spike proteins, and common cold coronaviruses (CCC). Coordinated CD4+ and CD8+ SARS-CoV-2-specific T cells were detected in five MIS-C subjects with cross-reactivity to CCC. CD4+ and CD8+ T cell responses alone were documented in three and one subjects, respectively. T cell specificities in MIS-C did not correlate with disease severity and were similar to SARS-CoV-2 convalescent controls. T cell memory and cross-reactivity to CCC in MIS-C and SARS-CoV-2 convalescent controls were also similar. The chemokine receptor CCR6, but not CCR9, was highly expressed on SARS-CoV-2-specific CD4+ but not CD8+ T cells. Only two of 10 KD subjects showed a T cell response to CCC. Enumeration of myeloid antigen presenting cells revealed low cell precursors in MIS-C subjects compared to KD. In summary, children with MIS-C mount a normal T cell response to SARS-CoV-2 with no apparent relationship to antecedent CCC exposure. Low numbers of tolerogenic myeloid dendritic cells may impair their anti-inflammatory response.


Doi: [10.1097/inf.0000000000003327](https://doi.org/10.1097/inf.0000000000003327)

**Abstract**

Multisystem inflammatory syndrome in children (MIS-C) is a rare but life-threatening inflammatory immune response associated with severe acute respiratory syndrome coronavirus 2 infection. The majority of patients have been presented with hypotension, shock, gastrointestinal, cardiovascular and mucocutaneous symptoms. The incidence of neurologic symptoms in MIS-C is of rising concern as they are not well described and reported in fewer patients. An 8-year-old boy was admitted to the hospital with headache, fever, conjunctivitis, and hyperinflammatory findings diagnosed as MIS-C. Fundus examination performed with complaints of headache, vomiting, and conjunctivitis showed bilateral papilledema. Pseudotumor cerebri is a rare manifestation of MIS-C that can lead to vision loss and may not only be resolved with the standard treatment for MIS-C. We report a case of MIS-C presented with neurologic symptoms due to pseudotumor cerebri and successfully treated with intravenous immunoglobulin and acetazolamide.

Doi: 10.1080/00325481.2021.1987732

Abstract

Objectives: Multisystem inflammatory syndrome in children (MIS-C) is a rare but severe condition resulting in excessive response of the immune system after SARS-CoV-2 infection. We report a single center cohort of children with MIS-C, describing the spectrum of presentation, therapies, clinical course, and short-term outcomes.

Methods: This is a prospective observational study from to a tertiary pediatric rheumatology center including patients (aged 1 month to 21 years) diagnosed with MIS-C between April 2020-April 2021. Demographic, clinical, laboratory results and follow-up data were collected through the electronic patient record system and analyzed.

Results: A total of 67 patients with MIS-C were included into the study. Fever was detected in all patients; gastrointestinal system symptoms was found in 67.2% of the patients, rash in 38.8%, conjunctivitis in 31.3%, hypotension in 26.9% myocarditis and/or pericarditis in 22.4%, respectively. Respiratory symptoms were only in 5 patients (7.5%). Kawasaki Disease like presentation was found 37.3 % of patients. The mean duration of hospitalization was 11.8 7.07 days. Fifty-seven patients (85%) received intravenous immunoglobulin (IVIG), 45 (67%) received corticosteroids, 17 (25.3%) received anakinra, and one (1.5%) received tocilizumab. Seven of the patients (10.4%) underwent therapeutic plasma exchange (TPE). In 21 (31.3%) patients, a pediatric intensive care unit (PICU) was required in a median of 2 days. The first finding to improve was fever, while the first parameter to decrease was ferritin (median 6.5 days (IQR, 4-11.2 days)). Sixty-five patients were discharged home with a median duration of hospital stay of 10 days (IQR, 7-15 days).

Conclusion: The patients with MIS-C may have severe cardiac findings and intensive care requirements in admission and hospital follow-up. The vast majority of these findings improve with effective treatment without any sequelae until discharge and in a short time in follow-up. Although the pathogenesis and treatment plan of the disease are partially elucidated, follow-up studies are needed in terms of long-term prognosis and relapse probabilities.

Doi: 10.3389/fped.2021.642089

Abstract

Introduction: Telehealth utilization has been steadily increasing for the past two decades and has been recognized for its ability to access rural and underserved populations. The advent of COVID-19 in March 2020 limited the feasibility of in-person healthcare visits which in turn increased telehealth demand and use. However, the long-term impacts of COVID-19 on the telehealth sector of the healthcare industry, and particularly on pediatric healthcare volume demand and subsequent expansion, are yet to be determined. Objective and Methods: To understand the impact of COVID-19 on telehealth utilization, volume demand, and expansion in one large pediatric healthcare system serving greater Dallas-Fort Worth, Texas, data on telehealth clinic visits by month, pre-COVID and post/current-COVID were compared. A quasi-experimental pretest-posttest design analysis compared telehealth visit counts from 54 ambulatory pediatric health specialties. Pre-post new patient counts were also analyzed via chi square. Results: Total telehealth visit counts significantly increased between March-October 2019 (2,033 visits) compared to March-October 2020 (54,276 visits). Mean monthly telehealth visits increased by 6,530 visits, or 2,569.75% over the same time period (p < 0.0001). In October 2020, total telehealth visits were still 1,194.78% above 2019 levels (345 visits in 2019 vs. 4467 visits in 2020). Discussion: Results here show a substantial volume increase in telehealth-delivered pediatric healthcare and resource utilization as a response to COVID-19. This provides a template for permanent adoption of pediatric telehealth delivery post pandemic. Further investigation is needed to determine impacts upon resource allocation, processes, and general models and standard of care to assist facilities and programs to better address the needs of the pediatric populations they serve in the post-COVID era.

Doi: 10.1007/s42399-021-01050-8

Abstract

COVID-19 pandemic has imposed many challenges on paediatric liver transplantation (PLT) services and has necessitated several adaptations in different stages of the process to ensure transplant centres can still deliver the proposed services in addition to protecting patients and staff against infection. This review article digs through the current literature to clarify the challenges imposed by SARS-CoV2 on PLT centres globally. It provides an overview of current practice as well as suggestions from experts in the field to overcome multiple obstacles. In paediatrics, the reaction to SARS-CoV2 may be less severe than that seen in the adult population, but this can change in view of newly discovered virus strains. Response of transplant centres to the current pandemic was variable depending on the anticipated risk and available resources. Telemedicine has helped PLT programmes to continue their activities while protecting patients, as well as staff against the risk of SARS-CoV2 virus. Further studies are needed to guide immunosuppression management in post-transplant infected candidates; answering this critical question will help PLT centres solve this dilemma.

Doi: 10.1155/2021/8268755

Abstract

Background: There have been an increasing number of reports of myocarditis and pericarditis in adolescents and young adults after coronavirus disease 19 vaccinations. The pathophysiology of myocarditis after this vaccination is indeterminate currently. The problem is a relatively new phenomenon, and so there are no current guidelines on how to manage these cases of myopericarditis. We intend to describe our management in these two cases so that it can help guide pediatricians, intensivists, and cardiologists taking care of similar cases. Case Summaries. The first case is a young adolescent who presented with chest pain after receiving his second dose of coronavirus disease 19 vaccination with no other symptoms. His troponin was found to be 40 ng/mL. He had a normal echocardiogram and chest CT angiogram. His troponins trended down with symptomatic pain management after 3 days. The second case is another adolescent who presented with fever, fatigue, headache, and chest pain 3 days after receiving his second dose of coronavirus vaccine. His troponin was elevated to 5 ng/mL, electrocardiogram with ST segment elevations, and mildly decreased systolic function on echocardiogram. His troponins and electrocardiogram were normalized in 3 days at the time of his discharge.

Conclusion: The clinical course of vaccine-associated myocarditis appears favorable as both our patients have responded well to medications and rest with prompt improvement in symptoms with full recovery. The experience remains limited at this time regarding the investigations, management, and follow-up of this novel clinical entity. It is vital for all the health care providers taking care of adolescents to have knowledge about this phenomenon and make correct diagnosis in those presenting with chest pain after COVID-19 vaccine and in preventing unnecessary invasive procedures such as coronary angiogram to rule out acute coronary syndromes.

Doi: 10.3390/vaccines9091049

Abstract

A paucity of data exists evaluating a guardian's intent to vaccinate their child against COVID-19 in the United States. We administered 102 first (April–November 2020) and 45 second (December–January 2020–2021) surveys to guardians of children (<18 years) who had a laboratory-confirmed diagnosis of COVID-19 and assessed their intent to give a COVID-19 vaccine to their child, when one becomes available. The first and second surveys of the same cohort of guardians were conducted before and following the press releases detailing the adult Pfizer-BioNTech and Moderna Phase 3 results. Both surveys included an intent-to-vaccinate question using the subjective language of "if a safe and effective vaccine" became available, and a second question was added to second surveys using the objective language of "would prevent 19 of 20 people from getting disease". When using subjective language, 24 of 45 (53%) guardians endorsed vaccine administration for their children in the first survey, which decreased to 21 (46%) in the second survey. When adding objective language, acceptance of vaccination increased to 31 (69%, \( p = 0.03 \)). Common reasons for declining vaccination were concerns about adverse effects and/or vaccine safety. Providing additional facts on vaccine efficacy increased vaccine acceptance. Evidence-based strategies are needed to increase pediatric COVID-19 vaccine uptake.


Doi: 10.1007/s00787-021-01878-4

Abstract

Vaccination is essential to control the COVID-19 pandemic. High vaccination willingness is a key for successful vaccination programs. This study assessed attitudes toward vaccination in Austrian adolescents and determined whether there are differences in vaccination readiness regarding education status, gender and migration background. Two cross-sectional online surveys were conducted from March to July 2021 in apprentices and high school students. Willingness to receive COVID-19 vaccination was rated on a 5-point scale. In total, \( n = 2006 \) (\( n = 1442 \) apprentices and \( n = 564 \) high school students) completed the survey. Willingness to receive COVID-19 vaccination was higher in students compared to apprentices (\( p < 0.001 \)). Furthermore, migration background (\( p = 0.023 \)) and female gender (\( p = 0.001 \)) were associated with lower vaccination willingness. In conclusion, more efforts are required to improve confidence and willingness to vaccinate adolescents with lower educational levels, those with migrant backgrounds and females.

Doi: 10.1080/14760584.2021.1986390

Abstract

Introduction: The concern of undergoing vaccination during pregnancy and lactation, in absence of data on safety and efficacy in these target populations, is subject of ongoing debate nationally and internationally. However, the only real prophylactic strategy against COVID-19 is still mass vaccination, which means to vaccinate infants and pregnant and lactating women.

Areas covered: This is a systematic review aiming to evaluate the safety and the efficacy of COVID-19 vaccines in pregnant and lactating women and their newborns. We did advanced research on PubMed and Google Scholar, and searched for any evidence also on ClinicalTrials.gov. Results refer to a timeline going until 12th June 2021.

Expert opinion: Our efforts must be directed to vaccine more and more population groups which have been preliminarily excluded from the vaccination campaign. Studies have not so far highlighted plausible adverse effects in vaccinated pregnant women or in their newborns. Reactogenicity across lactating and pregnant women does not seem to differ from general population. Likewise, abortion rate does not differ from non-vaccinated pregnant women studied before the COVID-19 pandemic. It also seems that a major amount of anti-SARS-CoV-2 immunoglobulins is transferred through the placenta and the breastmilk to the newborn, providing humoral immunity.
Este es el nuevo punto de información pensado para personal médico y pacientes sobre coronavirus de Elsevier. Aquí encontrarás información experta y de calidad para la comunidad científica y los profesionales de la salud sobre el nuevo coronavirus (también denominado COVID-19 y SARS-CoV).

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