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LETTER TO THE EDITOR

COVID-19 in children in Brunei Darussalam: Higher incidence but mild manifestations

Dear Editor,

Corona Virus Disease 2019 (COVID-19) predominately affects the adult population and it is estimated that children account for only between 2% and 5% of all COVID-19 cases.[1-3] The manifestations in children are usually mild but severe manifestations have been reported. Here we share our experience in pediatric patients with COVID-19.

In Brunei Darussalam, all reverse transcriptase-polymerase chain reaction (RT-PCR) confirmed COVID-19 cases were admitted to the National Isolation Centre for a minimum of 14 days. For the pediatric patients (≤12 years), we deviated slightly from our management protocol previously described,[4] with an initial clinical assessment to decide on the need for investigations. To minimize trauma, blood investigations were only done when indicated. Patients were monitored with the Paediatric Early Warning Score. Swabbing for RT-PCR was done on the 13th day of hospitalization as per protocol. If the test was positive, then this was repeated at 48 hours' intervals. A negative result was followed by a repeat in 24 hours. Once two consecutive negatives were obtained and with clinical symptoms recovery, patients were discharged. Postdischarge, patients were issued a 14 days' self-isolation notice and were also monitored. On the 11th day, a repeat RT-PCR was done, and patients were readmitted if they retested positive.

As of 15th June 2020, there was a total of 141 confirmed COVID-19 cases, of which 12 (8.5%) were in the pediatric population (median age 6 years [range: 6 months-12 years] and seven boys and five girls). Summary of patients' profiles, progress, and outcomes is shown in Table 1. All were categorized as mild COVID-19. Four patients had comorbidities. All were diagnosed through contact tracing involving mostly family members who had traveled overseas. Overall 8 (66.7%) had mild symptoms, including one who developed symptoms after admission. Fever (50.0%) and cough (50.0%) were the most common symptoms. Only three (25%) had blood investigations. A chest radiograph was done in seven older patients and all were normal. One was treated with antibiotics. For symptomatic patients, symptoms resolution occurred by the fifth day of admission and all were discharged at a median of 14 days (range: 14-25). None of our pediatric patients required specific treatment (lopinavir/ritonavir) for COVID-19. One (case 2) was readmitted after discharge because of retesting positive along with his parents. At a median of 73 days (range: 48-78) postdischarge, there were no sequelae or complications of COVID-19.

We reported a much higher incidence of COVID-19 in children compared to what has been reported in the literature.[1] Our higher rate may have been due to our aggressive surveillance and contact tracing resulting in high case identifications. To date, through a community serology survey, we had detected six positive cases out of 535 persons who had not been diagnosed with COVID-19 indicating that we had missed a small proportion of patients. What has been reported in the literature may be underestimated given that only patients who have been tested were counted and, generally mild or asymptomatic cases were not tested. The clinical manifestations and disease course in children are generally mild as reported in the literature.[1-3] Recent articles have reviewed the manifestations of COVID-19 in children[5] and another discussed the reasons for mild manifestations.[6] All our patients had mild disease and did not require any specific treatment for COVID-19. As our understanding increases, management protocols will continue to evolve. Even though a less aggressive management approach can be adopted, we must remain vigilant, monitor closely and investigate appropriately not just during hospitalizations, but also after discharge as delayed immune driven complications such as Kawasaki like syndrome have been reported.[7,8] In conclusion, we showed that the incidence of COVID-19 in children in Brunei Darussalam is higher than reported, and in agreement with what has been published in the literature, manifestations are generally mild.

CONFLICT OF INTERESTS

The authors declare that there are no conflict of interests.

AUTHORS CONTRIBUTIONS

All authors involved with care of patients and contributed to data collections. SG and VHC conceived the idea. SG and VHC drafted the first draft. All authors critically review the manuscript. VHC revised the manuscript, all authors approved the final version.

KEYWORDS

children, pediatric, SARS-CoV-2, severe respiratory distress syndrome

TABLE 1 Characteristics, progress, and outcomes of patients

Case	Age (gender)	Positive contact	Comorbid conditions	Symptoms on admission	Laboratory	Management	Outcome
1	12 y (M)	Father	Autism overweight	Low-grade fever 1 d	Not done	Acetaminophen	Discharged after 22 d
2	5 y (M)	Father	Autism obesity	Low-grade fever and mild cold symptoms for 1 d	Not done	Acetaminophen	Discharged after 22 d
3	9 mo (F)	Father	…	Mild cough and cold for 2 d	Not done	Acetaminophen	Discharged after 14 d
4	3 y (F)	Father	…	Asymptomatic	Not done	…	Discharged after 14 d
5	7 y (M)	Teacher	…	Asymptomatic	Not done	…	Discharged after 14 d
6	12 y (M)	Clinic with confirmed case	Obesity	Asymptomatic	Not done	…	Discharged after 14 d
7	4 y (F)	Father	…	Mild cold symptoms 1 d	Normal Blood culture −ve	IV antibiotics Fever (40°C) for 72 h Acetaminophen	Discharged after 14 d
8	10 y (F)	Father	…	Low-grade fever and cough 1 d	Not done	Acetaminophen	Discharged after 14 d
9	6 mo (F)	Grandparent	…	Asymptomatic on admission	Not done	Acetaminophen Fever for 48 h	Discharged after 14 d
10	10 y (M)	Father	…	Mild cold and cough 1 d	Normal blood culture −ve	Fever during hospitalization for 48 h Acetaminophen	Discharged after 14 d
11	3 y (M)	Father	…	Fever 3 d, mild cold, and loose stools 1 d	Not done	…	Discharged after 25 d
12	12 y (M)	Father	Obesity developmental delay	Asymptomatic	Normal	Acetaminophen	Discharged after 19 d

Abbreviations: d, day; F, female; h, hour; M, male; mo, month; y, year.

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REFERENCES

1. Ludvigsson JF. Systematic review of COVID-19 in children shows milder cases and a better prognosis than adults. *Acta Paediatr*. 2020; 109:1088-1095. https://doi.org/10.1111/apa.15270
2. Peng H, Gao P, Xu Q, et al. Coronavirus disease 2019 in children: characteristics, antimicrobial treatment, and outcomes. *J Clin Virol*. 2020;128:104425. https://doi.org/10.1016/j.jcv.2020.104425
3. Panahi L, Amiri M, Pouy S. Clinical characteristics of COVID-19 infection in newborns and pediatrics: a systematic review. *Arch Acad Emerg Med*. 2020;8:e50.
4. Chong VH, Chong PL, Metussin D, et al. Conduction abnormalities in hydroxychloroquine add on therapy to lopinavir/ritonavir in COVID-19 [published online ahead of print May 13, 2020]. *J Med Virol*. 2020. https://doi.org/10.1002/jmv.26004
5. Cui X, Zhang T, Zheng J, et al. Children with coronavirus disease 2019: a review of demographic, clinical, laboratory, and imaging features in pediatric patients [published online ahead of print May 17, 2020]. *J Med Virol*. 2020. https://doi.org/10.1002/jmv.26023
6. Miri SM, Noorbakhsh F, Mohebbi SR, Ghaemi A. Higher prevalence of asymptomatic or mild COVID-19 in children, claims and clues [published online ahead of print]. *J Med Virol*. 2020. https://doi.org/10.1002/jmv.26069
7. Licciardi F, Pruccoli G, Denina M, et al. SARS-CoV-2-induced Kawasaki-like hyperinflammatory syndrome: a novel COVID phenotype in children [published online ahead of print]. *Pediatrics*. 2020: e20201711. https://doi.org/10.1542/peds.2020-1711
8. Latimer G, Corriveau C, DeBiasi RL, et al. Cardiac dysfunction and thrombocytopenia-associated multiple organ failure inflammation phenotype in a severe paediatric case of COVID-19. *Lancet Child Adolesc Health*. 2020;4:552-554. https://doi.org/10.1016/S2352-4642(20)30163-2