

Letter to Editor

COVID-19 -The Pandemic in the Kid Zone

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The coronavirus disease of 2019 (COVID-19), caused by the novel coronavirus also known as severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) has caused a significant impact all over the world as it has been widespread affecting more than 500000 people in more than 170 countries since the virus was identified in January 2020 [1]. A series of more than 2000 children with suspected or confirmed COVID-19 was reported by Dong Y, et al [2]. 4% of these children, who were virologically confirmed cases, had an asymptomatic infection. Among symptomatic children, 5% had dyspnea or hypoxemia. This is comparatively lower than the data reported for adults in Wuhan, China [3]. Among symptomatic children with dyspnea, 0.6% progressed to acute respiratory distress syndrome or even multi-organ failure. Severe clinical manifestations were noted in preschool-aged children and infants than older children.

Compared to older adults, children were less likely to become severely ill. But there were clusters of children with an increased risk for more significant non-COVID-19 coronavirus infections. Li YT et al reported that coronavirus was detected in more children with acute respiratory distress syndrome than human metapneumovirus [4]. Heimdal I et al. The authors of another study detected coronaviruses in 10% of hospitalized Norwegian children with respiratory tract infections [5]. Young age, underlying respiratory disease, and immunosuppression were associated with serious complications with non-COVID-19 coronavirus infections in children. Heimdal I, et al. revealed viral co-infections in up to two-thirds of children from whom coronaviruses were detected from the respiratory tract [5].

Children play a major role in community-based viral transmission. Dong Y, et al. suggested children to have more upper respiratory tract involvement (including nasopharyngeal carriage) rather than lower respiratory tract involvement [2]. Moreover, children act as carriers in regard to fecal shedding of virus in the stool for several weeks after diagnosis resulting in viral replication in the gastrointestinal tract [6]. This leads to the fecal-oral transmission of the virus, especially among infants and children who are not toileting trained [7]. Community transmission in child care centers, in schools, and in the home is attributed to prolonged shedding in nasal secretions and stool. Contact tracing and public health measures to mitigate spread become less effective due to prolonged viral shedding in asymptomatic children.

Vertical transmission of COVID-19 has not yet been reported. Still, many of the mothers infected with COVID-19 were taken up for surgical delivery to separate neonates from their infected mother as early as possible [8].

The postulates explaining the low susceptibility of children to COVID-19 include [9].

1. Immature angiotensin-converting enzyme 2 (ACE2) receptors - as limited functioning ACE2 receptors are not readily infected by SARS-CoV.

2. Immature innate immune system – which results in less inflammation and subsequently fewer symptoms.

3. Cross-reactivity of antibodies against other viruses (influenza, adenovirus, respiratory syncytial virus (RSV), etc.) with the SARS-CoV-2 – this provides partial protection.

Pandemic like COVID-19 has more impact on the population who are in their economically productive age group or who use the highest resources. But focusing on children is important to accurately monitor the pandemic and to ensure appropriate resources for children requiring care. In the long run, focusing on the child perspective of the COVID-19 pandemic will help us to develop new treatment modalities, vaccination and develop new insights into disease pathogenesis and progression differing from adults.

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