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Review Article

SARS- COV-2 among Pediatrics

Yousif M Elhaj[1] and Mosab Nouraldein Mohammed Hamad[2*]

[1]Faculty of Medicine, Karary University, Sudan
[2]Medical Laboratory Science Department, Faculty of Health Science, Elsheikh Abdallah Elbadri University, Berber, Sudan

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***Corresponding author:** Mosab Nouraldein Mohammed Hamad

Abstract

SARS COV-2 has been stated a pandemic by the World Health Organization as established cases come up to more than 11.200.000 patients with what will exceed 528.000 deaths across over the world. COVID-19 can look dissimilar in different people. For numerous people, being unwell with COVID-19 would be a little bit like having the flu. People can get a fever, cough, or have a hard time taking deep breaths. The majority people who have gotten COVID-19 have not gotten very sick. Merely a small group of people who get it have had more grave problems. Most kids do not show to be at higher risk for COVID-19 than adults. As some children and infants have been sick with COVID-19, adults make up most of the known cases to date. Alterations of clinical manifestation between children and adults infected with SARS COV-2 were attributed to differences in immune response, which is depending on the levels of immuno-modulating agents. Several diagnostic methods were implemented to support the clinical diagnosis, up to date there is no constant protocol to treat SARS COV-2 whether in children or adults, extensive researches are needed to face this pandemic crisis.

Keywords: SARS COV-2 infection, Pediatrics, Pandemic, Diagnosis, Therapy.

INTRODUCTION

Near the beginning of December 2019, a number of pneumonia cases of unidentified origin emerged in Wuhan, Hubei province, China. The majority of these patients reported exposure to the Huanan Seafood Wholesale Market selling numerous species of live animals. The illness quickly extends, domestically, to other parts of China, and internationally to several countries across 6 continents. On January 3, 2020, a novel member of enveloped RNA coronavirus was recognized in specimens of bronchoalveolar lavage fluid from a patient in Wuhan and then confirmed as the cause of this sickness by the Chinese Center for Disease Control and Prevention (CDC). On January 7, 2020, the World Health Organization called it the 2019 novel coronavirus (2019-nCoV). On February 11, 2020, the WHO called the disease connected with 2019-nCoV the 2019 novel coronavirus disease (COVID-19).

Appearance of 2019-nCoV has involved international concentration, and the WHO has affirmed the SARS COV-2 a public health crisis of global anxiety (PHEIC). As the epidemic of severe acute respiratory syndrome in Guangdong, China, in 2003, the WHO has stated 5 PHEICs: H1N1 (2009), polio (2014), Ebola in West Africa (2014), Zika (2016), and Ebola in the Democratic Republic of the Congo (2019). Announcing a PHEIC is a vital call, at the highest level, for the global community to open a global synchronized attempt to stop the epidemic, which needs a powerful public health response, high-level political promise, and adequate funding. As of March 2, 2020, a sum of 80 174 SARS COV-2 cases in China and 8774 cases in 64 countries have been established. In spite of the universal increase, the epidemiological and clinical patterns of SARS COV-2 stay largely indistinct, mainly between children [1].

SARS COV-2 occurred in kids, leading to moderate-to-severe respiratory sickness, in the early stage of the SARS-CoV-2 epidemic in Wuhan and was linked with ICU entrance in one patient. None of the patients or their relatives had had direct contact to Huanan Seafood Wholesale Market (the initial location to which cases of SARS COV-2 were connected) or to one another. It is value declaring that we unpredictably establish a case of SARS COV-2 in one patient who lived outside Wuhan; this patient had sickness beginning on January 2, 2020. The patient and her relatives were inhabitants of the Yangxin area of Huangshi and had not left the city in the month prior to sickness onset. We have not recognized the cause of

infection for this patient. SARS-CoV-2 infections in children were happening early in the outbreak [2].

The SARS COV-2 symptoms appear to be less severe in kids than in adults. One study by Dong *et al.* tested 2143 kids who were recognized through laboratory examinations by a mixture of clinical manifestations and contact history. Of these, 34.1% had laboratory- established illness, while the rest had clinically supposed illness. Their symptoms were characteristic of acute respiratory infections and incorporated fever, cough, a sore throat, sneezing, myalgia and fatigue. A number of kids were wheezing. An additional study from the Wuhan Children's hospital, which almost certainly overlapped with the Dong *et al* study, reviewed 171 kids with known illness and presented more full symptoms. The most widespread symptoms were cough (48.5%), pharyngeal erythema (46.2%) and a fever of at least 37.5°C (41.5%). The investigators accounted that 32.1% of the kids had fever above 38°C and that most of these had 38.1°C- 39.0°C.Other researches have suggested that fever in kids is frequently under 39°C. Additional clinical features were diarrhea (8.8%), exhaustion (7.6%), rhinorrhea (7.6%) and vomiting (6.4%). Four out of 171 kids (2.3%) had low oxygen saturations of less than 92%. It should be observed that some SARS COV-2 published reports have defined low oxygen saturation as fewer than 93% or 94%. A considerable proportion of kids confirmed tachypnoea (28.7%) and tachycardia (42.1%) on hospital admission. In a lesser case series of 10 Chinese kids investigated exterior Wuhan, eight had fever and six had a cough. In a study that has only been published in Chinese so far, but was referenced by Yang *et al.* 76.1% of 134 kids with SARS COV-2 had fever [3].

Infants and young kids are characteristically at high risk for admittance to hospital following respiratory tract infection with viruses such as respiratory syncytial virus and influenza virus.

Immaturity of the respiratory system and immune tract is thought to participate to severe viral respiratory illness in children.

Consequently, the absence of kids infected with SARS COV-2 has puzzled clinicians, epidemiologists, and scientists. Case descriptions and managing strategies for kids are missing because of the inadequate number of pediatric patients with SARS COV-2 [4]. While kids are less likely than elder adults to become harshly sick, there are subpopulations of kids with an amplified risk for more important sickness. As transplacental transmission has not yet been documented, several of the infants born to mothers infected with SARS COV-2 were delivered surgically and rapidly separated from their mothers. Several communicable diseases influence pregnant women more severely, and respiratory illness in pregnant women may lead to poor fetal outcomes.

Several transmittable diseases influence kids differently from adults, and sympathetic those differences can give way to significant insights into illness pathogenesis, informing management and the progress of therapeutics [5].

DISCUSSION

Inflammatory responses in adults and kids vary and differ all through the lifespan. Schouten et al. said that rising proinflammatory cytokines linked with neutrophils function with age also correlated with harshness of acute respiratory distress syndrome (ARDS) and may partly clarify age-dependent dissimilarity. Levels of myeloperoxidase, interleukin (IL)-6, IL-10 and p-selectin were elevated with rising age, while intercellular adhesion molecule-1 was elevated in neonates in bronchoaveolar lavage specimens. Wong *et al*. establish that 2360 genes in neutrophils, 965 in monocytes and 109 genes in lymphocytes were upregulated or down regulated in pediatric septic shock, strengthening the information that circulating lymphocytes are not the chief leukocyte population with changed gene profiles during septic shock. Wynn et al. establish remarkable dissimilarities in the transcriptomic response linked to age in pediatric septic shock. Jeljeli *et al.* investigated the ontogeny of cytokine creation in response to phytohaemagglutinin from neonates to adults and notable the change from amplified IL-10 as neonates to balanced IL-10/T helper type 1 (Th1)/Th2/Th17 cytokine levels early in life. This allows resistance from pathogens ameliorates the cytokine storm [6].

CONCLUSION

Diagnostic methods such as chest X-ray and laboratory tests as Erythrocyte sedimentation rate, serum ferritin, Complete blood count parameters such as MCH, Lymphocytes and Neutrophils percentages, CRP level and uncountable number of yeast cells in stool may indicate infection with SARS CV-2, molecular methods like RT-PCR or serological assessment for IgM/IgG are used to confirm infection with that fatal virus.

Therapeutic choices include steroids, Doxacycline, intravenous immunoglobulin, selective cytokine blockade (e.g. anakinra or tocilizumab), Remdesivir. Babies aspirin is hypothesized as supportive therapeutic agent.

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