



MULTISYSTEM INFLAMMATORY SYNDROME IN CHILDREN

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ABSTRACT

COVID-19 has spread all over the world rapidly. Adults of age above 60 and children below the age of 10 are more susceptible to infection. During April 2020, Children attacked by COVID developed again symptoms of fever, fatigue, chills, abdominal pain even after recovery from COVID. When tested for COVID, it has been found that they have developed multisystem inflammation. There is a lag period in between two diseases. This has been noticed worldwide by May 2020. In Mumbai, there are cases of death in children developing severe cardiovascular and cardio respiratory disorders. Obese children below the age of 17 are more prone to hyperinflammation and developed cytokines in the adipose tissue. Symptoms are silently developed in the lag period and intensive care unit care is needed for the children. WHO has surveyed and reported that the death rate is more in African American countries than Asian.

KEYWORDS :**INTRODUCTION**

Children under the age of 10 are very sensitive and are prone to infections of lung diseases. Among them is SARS-CoV2, a member of influenza viruses. If there is COVID attack, these children will get more sensitive to other infections also. The immune system will be so weak and cannot withstand any kind of disease. Multisystem Inflammatory Syndrome in children is associated with COVID and occurs simultaneously. First case has been reported in May, 2020 in Mumbai. Children after recovery from COVID develop conjunctivitis, edema, fever, gastrointestinal disorders. The definition all over the organizations is based on 6 principle elements: age of the child, persistence of fever, presence of laboratory markers of inflammation, manifestation of signs or symptoms of organ dysfunction, lacking an alternative diagnosis, and a temporal relation to COVID-19 infection or exposure. Hyperinflammation in Multisystem Inflammatory Syndrome caused elevated levels of cytokines³. This has led to multiorgan dysfunction in few children. The syndrome is more seen in children who are obese due to the accumulation of inflammatory cytokines in the adipose region which are proinflammatory and triggered instantly. Impaired respiratory syndrome and having receptors for SARS-CoV2 in adipose tissue is added cause for the disease progress in children. Kawasaki disease in children is associated with this in cardiac failure.

Epidemiology

First outbreak of this is noticed in children from African countries. Death rates were disproportionate in African American countries in children of age <17. This was first reported in May 2020. The incidence of this is 2 in 100000 children in UK in April, 2020. Later new cases emerged in United States and South Africa¹. No such case is noticed in Asia in early pandemic time. The occurrence of developing MIS-C varied by race and ethnicity, with black and Hispanic children accounting for a disproportionately high number of cases, and Asian children accounting for a small number of cases. In three large case series, 25 to 45 percent of patients were black, 30 to 40 percent Hispanic, 15 to 25 percent white, and 3 to 28 percent Asian. There is a lag between the COVID-19 and MIS-C as long as 4 weeks.

Clinical Features

The syndrome is an inflammatory reaction in the body about four weeks after infection with the SARS-CoV-2 virus. The initial symptoms often include fever, rashes, red eyes,

diarrhea and vomiting, and may get worse over a few days. The inflammation can affect the heart, blood vessels and other organs, which can make some children very ill and in need of urgent care.

Problem Statement

The disease has to be addressed as immediate need. As children develop symptoms in 4 weeks and rapidly progress in to shock and cardiorespiratory failure. Parents should seek immediate attention from paediatrician as children will decompensate immediately and intensive care unit assistance is needed². IVIG, steroids, a multidisciplinary team of healthcare providers, and in some cases immunomodulatory agents are needed to recover from this hyperinflammation. Diagnostic procedure should be developed so that it can be detected at an early stage in lag period. WHO has to address this problem as it is race and ethnicity dependent. Globally any vaccine that can stop the infection spread should be developed.¹

MIS-C And Covid

Pediatrician Anna Sick-Samuels explains that MIS-C is triggered by the virus that causes COVID-19. It can occur in children who have not had any common symptoms of COVID-19, such as fever, sore throat or cough.

"Most children with MIS-C will have antibodies to the SARS-CoV-2 virus, indicating their body has been infected previously," she notes. "The number of MIS-C cases also rises about four weeks after waves of COVID-19 cases in that community. Doctors and researchers are still learning why some children develop this illness after COVID-19 infection but not others."

Prevention

Keep hands clean. Wash hands often with soap and water for at least 20 seconds. If soap and water aren't available, use a hand sanitizer that contains at least 60% alcohol.

Avoid people who are sick. In particular, avoid people who are coughing, sneezing or showing other signs that indicate they might be sick and contagious.

Practice social distancing. This means that you and your child should stay at least 6 feet (2 meters) from other people when outside of your home.

Wear cloth face masks in public settings. When in indoor public places or outdoors where there is a high risk of COVID-19 transmission, such as at a crowded event or large gathering, both you and your child — if he or she is at least 2 years old — should wear face masks that cover the nose and mouth. Further mask guidance differs depending on whether you are fully vaccinated or unvaccinated.

Avoid touching your nose, eyes and mouth. Encourage your child to follow your lead and avoid touching his or her face.

Cover your mouth with a tissue or your elbow when you sneeze or cough. You and your child should practice covering your mouths when you sneeze or cough to avoid spreading germs.

Clean and disinfect high-touch surfaces every day. This includes areas of your home such as doorknobs, light switches, remotes, handles, countertops, tables, chairs, desks, keyboards, faucets, sinks and toilets.

Wash clothing and other items as needed. Follow manufacturers' instructions, using the warmest appropriate water setting on your washing machine. Remember to include washable plush toys.

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Conflict Of Interest-
None

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