Children in US and UK dying from syndrome linked to COVID-19

By Jacob Crosse
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As governments around the world force workers back on the job and students back into classrooms, new concerns have arisen about the potential effects of COVID-19 on children. Doctors in Europe in the US have identified an emerging condition associated with the disease known as Pediatric Multisystem Inflammatory Syndrome, which primarily affects children. This coincides with an uptick in diagnoses of the ultra-rare Kawasaki's Disease in areas hardest hit by the pandemic.

Kawasaki’s Disease (KD) is a pediatric inflammatory disease that can cause severe heart complications including coronary artery damage and is one of the leading causes of heart disease in children. Multiple children have been identified with symptoms congruent with KD while at least three children, a five-year-old and seven year-old in the US and a fourteen year-old in the UK, have died from the newly named pediatric multisystem inflammatory syndrome.

KD is named after the Japanese pediatrician Tomisaku Kawasaki who first documented the disease in January 1961, and formerly named it in 1967 after observing 50 patients with a persistent fever, accompanied by rash, lymphadenopathy, edema, conjunctival injection, redness and cracking of the lips. Fewer than 20,000 cases of KD are diagnosed yearly in the US.

The most effective approach for combating KD and preventing the development of heart disease later on in life requires immediate treatment. However, with many avoiding hospitals due to overcrowding, government advice to stay home and self-isolate, as well as the fear of becoming infected, parents have been reluctant to bring their children in until they have to go to emergency rooms with severe blood clots in their arteries or coronary aneurysms.

The uptick in emergency room visits by children, previously thought to be “immune” to COVID-19, further shreds the claims of officials from Australia to Brazil to the United States about the coronavirus being only “a bad flu” that only affects the “old and infirm.”

As of this writing over 20 cases of the inflammatory syndrome have been discovered in the UK, while 73 of the 85 cases identified in the US have been from the state of New York. Doctors in the UK described the children’s state prior to infection as “previously fit and well.”

Children have been rushed to emergency rooms in Los Angeles, Philadelphia and Washington D.C. with low blood pressure, high fever and, in some cases, coronary artery aneurysms. Some children however have exhibited symptoms similar to toxic shock syndrome with vomiting, diarrhea and high levels of inflammation in the body, including in the heart.

Additional potential cases of the Kawasaki-like disease among children have also been identified in Spain and Italy. The first death related to the syndrome was confirmed on Friday by New York Governor Andrew Cuomo, while a second, seven-year-old child who died last week from similar symptoms is still “under investigation,” according to state officials. In normal circumstances it can be difficult to identify KD as there is no blood test. Health officials and researchers caution that many potential cases of KD may remain undiagnosed in the US.

From April 17 through May 1, 15 children were hospitalized with symptoms related to KD or pediatric multisystem inflammatory syndrome, according to Deputy Commissioner of Disease Control Demetre Daskalakis, of the New York City Health Department. The first case of KD related to COVID-19 was identified in a 6-month-old California child in early
April.

Initial findings published in the medical journal the *Lancet* on May 6 identified eight cases among children as young as 4 and as old as 14, with an additional 20 currently being treated for similar symptoms.

Epidemiologic and clinical features of KD suggest that it is an RNA (Ribonucleic acid) virus. Speaking to NBC News, Dr. Michael Bell, head of critical care medicine at Children’s National Hospital confirmed that, “All the kids have some sort of severe inflammation.”

Multiple children who have been diagnosed with the syndrome have presented as asymptomatic or tested negative for SARS-CoV-2, prior to developing severe fevers lasting for several days followed by red inflammation all over the body. All who have developed the syndrome have either been in close contact with someone else who has tested positive for the disease, or in the case of the UK child, tested positive for COVID-19 post-mortem.

In many cases the children developed symptoms four to six weeks after being exposed to COVID-19 and after developing antibodies, seemingly “overcoming” the disease. Speaking to National Public Radio (NPR), cardiologist Jane Newburger, a professor of pediatrics at Harvard Medical School and director of the Kawasaki Program at Boston Children's Hospital, said, “one theory is that as one begins to make antibodies to SARS-COV-2, the antibody itself may be provoking an immune response.” Newburger continued, “This is only happening in susceptible individuals whose immune systems are built in a particular way. It doesn’t happen in everybody. It’s still a really uncommon event in children.”

Dr. Purvi Parikh, a pediatric immunologist at NYU Langone Health, also speaking to NPR, confirmed that she’s seen three children all with, “the common theme ... fever and rash. One had very, very swollen lymph nodes and lymph glands. And then, aside from that, they had markers of inflammation elevated in their blood.”

“Up until now, we were mostly seeing these markers of inflammation in adults that were presenting with COVID-19,” the doctor continued. “But now we're also seeing a similar syndrome in children.”