

AFRICA CENTRES FOR DISEASE CONTROL AND PREVENTION

HEALTH ADVISORY

Multisystem Inflammatory Syndrome in Children and Adolescents Temporally Related to COVID-19

More than 5 million confirmed cases of coronavirus disease 2019 (COVID-19), including more than 320,000 deaths, have been reported globally as of 22 May 2020. Similarly, close 100,000 confirmed cases with over 3,000 deaths have been reported from Africa. Children aged 0–14 years constitute only 2.1% of confirmed cases.

Suspected pediatric clinical cases compatible with a multi-system inflammatory syndrome associated with COVID-19 have been reported in children and adolescents in Europe and North America. Based on initial laboratory findings, this syndrome is likely related to COVID-19. The syndrome has features which overlap with Kawasaki Disease and Toxic Shock Syndrome. So far, close to 350 cases of the syndrome have been reported globally with five fatalities.¹

The syndrome may occur days to weeks after acute COVID-19 illness and is thought to be a late onset inflammatory reaction to recent infection. Eliciting a recent history of COVID-19 illness or close contact with persons who are known to have COVID-19 is important. The diagnosis should be considered if COVID-19 cases are occurring in the local community, even if PCR testing is negative in the child. Persistent high fever, generalized body rash, bilateral conjunctivitis, myocarditis and gastrointestinal symptoms may be prominent. Additionally, some patients may present in shock and multiorgan failure. Respiratory symptoms may be absent. Neutrophilia, lymphopenia and elevated C-reactive protein, IL-6, and ferritin levels are other laboratory findings.

Interim Case Definition for Multisystem Inflammatory Syndrome in Children^{1,2}

- An individual aged < 21 years presenting with fever, laboratory evidence of inflammation, and evidence of clinically severe illness requiring hospitalization, with multisystem (≥ 2) organ involvement (cardiac, renal, respiratory, hematologic, gastrointestinal, dermatologic or neurological); **AND**
- No alternative plausible diagnoses (e.g. measles or drug reaction); **AND**
- Positive for current or recent SARS-CoV-2 infection by RT-PCR, serology, or antigen test; or COVID-19 exposure within the 4 weeks prior to the onset of symptoms.

- Fever is body temperature $\geq 38.0^{\circ}\text{C}$ for ≥ 24 hours, or report of subjective fever lasting ≥ 24 hours.
- Laboratory evidence of inflammation includes one or more of the following: an elevated C-reactive protein (CRP), erythrocyte sedimentation rate (ESR), fibrinogen, procalcitonin, d-dimer, ferritin, lactic acid dehydrogenase (LDH), or interleukin 6 (IL-6), elevated neutrophils, reduced lymphocytes and low albumin.
- Consider Multisystem Inflammatory Syndrome in any pediatric death with evidence of SARS-CoV-2 infection.

Recommendations

Early recognition of children presenting with symptoms that are compatible with multisystem inflammatory syndrome by clinicians is essential, and should lead to prompt referral for in-patient specialist evaluation (paediatric rheumatology, paediatric cardiology, and paediatric infectious disease if available). Hospital capabilities with critical care support are vital as children can progress to severe illness rapidly. Africa CDC also recommends that healthcare providers report any patient who meets the case definition to appropriate health authorities to enhance

knowledge of risk factors, pathogenesis, clinical course, and treatment of this syndrome.

Risk communication should be stepped up to raise awareness in the medical community about the syndrome. Parents and caregivers should be informed about the signs and symptoms of the syndrome, and the importance of timely contact with a healthcare worker/facility should be emphasized.