
PUBLIC HEALTH ALERT

Acute inflammatory illness in children temporally linked to COVID-19

An acute inflammatory illness has recently been reported in a small number of children worldwide, temporally associated with the COVID-19 pandemic. Clinical presentations include persistent fever and features suggestive of Kawasaki disease (complete or incomplete), toxic shock-like syndrome, euvolemic shock states, and severe gastrointestinal illness. Severe myocardial dysfunction and multiple organ failure have also been reported. While rare, clinicians should be aware of this potential syndrome and maintain a high index of suspicion to identify cases.

Laboratory signs of systemic inflammation include raised C-reactive protein (CRP) and serum ferritin levels, neutrophilia, and lymphopenia. Nasal swab tests may be positive or negative for SARS-CoV-2. A comprehensive history to identify confirmed or potential COVID-19 contacts should be obtained, and antibody testing (including on convalescent serum) and stool polymerase chain reaction (PCR) testing should be considered. Recognizing that these tests are not easily available to all, paediatricians may want to contact their local laboratories to discuss storing serum for future testing.

Some patients have deteriorated quickly and have required intensive care unit admission for vasopressors and mechanical ventilation. In addition to supportive care (often including broad-spectrum antibiotics), patients have been treated with corticosteroids, intravenous immune globulin, and anakinra or tocilizumab depending on the clinical situation and disease severity. Cardiac function should be measured and monitored frequently, including electrocardiogram, echocardiogram, and serum troponin. Discussions with colleagues from infectious diseases, rheumatology, immunology, cardiology, and intensive care should take place.

The Canadian Paediatric Surveillance Program COVID-19 surveillance case definition is being modified to capture cases of this hyperinflammatory syndrome (including cases without microbiological confirmation of COVID-19). This change in case definition is set to be in place by next week. In the meantime, we kindly ask you to keep a log of potential cases and to report all instances of this hyperinflammatory syndrome as soon as the electronic platform permits.

Thank you to Dr. Ron Laxer from The Hospital for Sick Children for providing content for this public health alert.