Eleven months after the discovery of SARS-CoV-2, investigators continue to learn about the wide-ranging effects of the virus that is responsible for the coronavirus disease 2019 (COVID-19) pandemic.

The MJH Life Sciences™ COVID-19 Coalition discussed the long-term health complications of the disease along with the consequences of adapting to a world under pandemic restrictions during the fifth in a series of webinars, Thinking Long-Term: COVID-19’s Clinical Consequences and Mental Health Effects. The coalition is a partnership with top health care thought leaders across a variety of medical disciplines.

Moderated by Tina Tan, MD, FAAP, FIDSA, FPIDS, professor of pediatrics at the Feinberg School of Medicine at Northwestern University in Chicago, Illinois, the webinar focused on the known and the potential unknown long-term effects of COVID-19 from clinical and psychiatric perspectives.
“It’s unclear what impact COVID-19 will have in the long run in terms of health consequences for those who have either been infected or those who have recovered,” Tan said. “Additionally, there are sure to be costs associated with adapting to our new virtual world, especially when it comes to the mental health of children and young adults.”

Along with Tan, who also serves as medical director of the International Patient Services Program, pediatric infectious diseases attending, and co-director of the Pediatric Travel Medicine Clinic at Northwestern’s Feinberg School of Medicine, as well as director of the International Adoptee Program at the Ann & Robert H. Lurie Children’s Hospital of Chicago, the event also featured:

Carlos del Rio, MD, executive associate dean of the Emory School of Medicine & Grady Health System in Atlanta, Georgia, and distinguished professor in the Department of Medicine, Division of Infectious Diseases, at Emory University School of Medicine, and

Colleen Cicchetti, PhD, MEd, executive director of the Center for Childhood Resilience at the Ann & Robert H. Lurie Children’s Hospital of Chicago Pritzker Department of Psychiatry and Behavioral Health and an associate professor of psychiatry and behavioral sciences at Northwestern University Feinberg School of Medicine.

What follows are 6 key takeaways from the webinar.


Long-term effects of COVID-19 in the pediatric population range from persistent symptoms like intermittent fevers, fatigue, cough, and headaches to neurologic problems and multisystem inflammatory syndrome in children (MIS-C).

“It was recognized that with MIS-C as well as with severe COVID disease in children that there was a major impact on the cardiac system of these individuals,” Tan said. “Because of that, the American Academy of Pediatrics put out guidance on returning to sports and returning to exercise in the pediatric population.”

The guidance calls for those with severe COVID-19 to be treated as though they have myocarditis, with exercise restricted for 3 to 6 months. These children should be cleared by their primary care physician and pediatric subspecialist before returning to sports.

Children with moderate COVID-19 symptoms must be asymptomatic for at least 14 days and receive clearance from their primary care physician before returning to exercise and competition.

Those with mild or asymptomatic infection or who have been exposed to the virus should sit out of exercise and competition for 14 days.
2. COVID-19 long haulers have experienced persistent symptoms.

Clinicians have reported persistent severe symptoms among some patients. A clear definition of these post-acute COVID-19 manifestations hasn’t been determined but patients experiencing them are sometimes referred to as COVID-19 long haulers.

“When we talk about resilience it’s important to remember that it’s not something that we’re born with a certain amount and that’s how we live, but it really is more like a muscle.”

“Obviously we need to understand this better,” del Rio said. “It’s clear that as clinicians we have observed sequelae of post-COVID, some just persistence of symptoms and clearly end-organ damage.”

More than 4 million people in the United States, the United Kingdom, and Sweden have shared their experiences on the COVID Symptom Study app. Data from the project suggest that around 10 to 15% of people infected with SARS-CoV-2 do not recover quickly, including those with mild cases.

Some proposed definitions include post-acute COVID-19, referring to those cases with persistent symptoms extending beyond 3 weeks, and chronic COVID-19, referring to those with persistent symptoms extending beyond 12 weeks.

Post-acute COVID-19 can include multisystem inflammatory syndrome, persistent symptoms, and organ failure.

A study of 143 patients hospitalized in Italy found that 55% had more than 3 symptoms 3 weeks after discharge, with the most common symptoms being fatigue, dyspnea, joint pain, and chest pain.

A study of 120 patients in France found that the most common symptoms reported an average of 110 days after discharge were fatigue, dyspnea, and loss of memory, with no significant difference reported between patients discharged from the ward or the ICU.

In a study highlighted in the US Centers for Disease Control and Prevention’s Morbidity and Mortality Weekly Report, 35% of 274 patients had not returned to their usual state of health an average of 16 days after symptom onset. The report also noted that 1 in 5 previously healthy adults aged 18 to 34 hadn’t returned to usual health 14 to 21 days after testing positive.

3. Some COVID-19 long haulers have experienced organ damage.

Organ damage, including pulmonary, cardiovascular, neurologic, and renal sequelae, has been reported among some COVID-19 long haulers.

Cardiovascular sequelae include myocardial inflammation, arrhythmias, and cardiomyopathy. A study of 100 patients in Germany found that MRIs performed an average of 71 days after COVID-19 diagnosis found cardiac involvement in 78% of patients and ongoing
myocardial inflammation in 60% of patients.

A study of 26 competitive college athletes found that, despite most of them reporting no symptoms, 46% had evidence of myocarditis or myocardial injury in MRIs.

“This is something very concerning when people say, ‘Well, young people do well with COVID,’” del Rio said. “Well, they may not do as well, especially when you consider this study.”

Pulmonary sequelae include acute respiratory distress syndrome, decreased diffusing capacity of lung for carbon monoxide, and evidence of intestinal thickening and fibrosis.

“If you compound this with the cardiovascular morbidity, you can have persistent decline in pulmonary function that could have significant consequences,” del Rio said.

Neurologic sequelae include neuropsychiatric conditions such as major mood swings and “brain fog.”

A study published in The Lancet Neurology in September found that neurological effects persist 4 to 6 months after initial COVID-19 symptom onset.

Some COVID-19 patients have reported prolonged kidney dysfunction, with one study finding that 31% of patients requiring renal replacement therapy (RRT) remained on dialysis at discharge and 37% of those not requiring RRT continued to experience renal dysfunction.

“I would say that it is possible that a large number of individuals will experience long-term sequelae of COVID,” del Rio said. “Post-COVID clinics are opening in many cities to care for these long haulers. It is imperative that this is done using a multidisciplinary approach. Finally, we need an integrated research agenda to define the syndrome and to efficiently and systematically conduct studies and therapeutic interventions in the future.”

4. Promoting mental health and wellness is important during the pandemic.

The COVID-19 pandemic has brought significant emotional and behavioral concerns, including feelings of isolation and loneliness, stigma, a sense of hopelessness, lingering malaise and exhaustion, and a greater risk of depression, anxiety, PTSD, and substance use disorder.

Helping children and youths build resiliency is a primary focus of the Center for Childhood Resilience at the Ann & Robert H. Lurie Children’s Hospital of Chicago.

“When we talk about resilience it’s important to remember that it’s not something that we’re born with a
If we can just start to ask families, ‘How is this illness impacting you?’, we’ll start to have a much better impact assessment of what’s going on.”

5. Health care providers can help assess needs and address stress.

The pandemic is stressful for everyone, but some children, families, and adults are experiencing potentially traumatic events.

“When we talk about trauma we’re not just talking about stress but we’re talking about that painful event that really does impact us not just in the functioning in that one domain but it starts to spread out and it affects our functioning across multiple domains,” Cicchetti said.

She encouraged clinicians to assess the level of stress their clients are experiencing by asking them directly about it and recommended tools including the Stoddard-Kaufman Coronavirus Impact Scale and the UCLA Brief COVID Screen for Child/Adolescent PTSD.

“The idea is if we can just start to ask families, ‘How is this illness impacting you?’ as part of their normal medical care, I think we’ll start to have a much better impact assessment of what’s going on with our families,” Cicchetti said.

Addressing stress involves creating a safe environment, building relationships and connectedness, and supporting and teaching emotion regulation.

“Most of our kids out in our communities are going to be OK,” Cicchetti said. “They might have strong reactions. They’ll remember this time. They will remember the Thanksgiving that they didn’t get to see grandma. They will remember the Halloween that was different. They will remember not being in school. But for many kids they will be able, with support from adults, to...
make sense out of that enough to be able to make that a chapter in their life.”

Supporting parents in developing coping skills and managing stress and encouraging them to connect with their children will benefit children who take their cues from their parents.

Along with practicing calming activities, Cicchetti recommended maintaining normal routines such as family dinners, watching movies together, or following bedtime rituals.

6. Individuals and communities can build resilience with a cycle of care.

Cicchetti stressed the importance of building in self-care and community care, including a focus on individual, interpersonal, institutional, and community needs.

Some self-care tips include practicing grace, finding time for yourself, delegating, practicing gratitude, and tapping relaxation apps.

Communities also can demonstrate resilience through such things as organizing fundraisers and food drives, conducting drive-by graduations and parades for children’s birthdays, and organizing school lunch distributions and charitable donations.

“Right now I think we’re all very concerned, but we also know that if we can do the work together that we can really start to heal as a culture and as a community and take care of those that really are experiencing true trauma as well as some of the complicated side effects that we heard about just a few minutes ago,” Cicchetti said.

References:


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