New neurocognitive/functional morbidity explored in SARS-CoV-2, multisystem inflammatory syndrome in children

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Children with acute severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and multisystem inflammatory syndrome (MIS-C) with severe neurological manifestations are more likely to have new neurocognitive and/or functional morbidity at hospital discharge, according to a study published online June 10 in *JAMA Network Open*.

Conall Francoeur, M.D.C.M., from the McGill University Health Center in Montreal, and colleagues conducted a prospective cohort study involving 3,568 patients younger than 18 years who were hospitalized for acute SARS-CoV-2 or MIS-C (83.5 and 16.5 percent, respectively) between Jan. 2, 2020, and July 31, 2021. The primary outcome was new neurocognitive and/or functional morbidity at hospital discharge.

The researchers found that 18.0 and 24.8 percent of the patients with acute SARS-CoV-2 and MIS-C, respectively, had a severe neurological manifestation during hospitalization.

The likelihood of having new neurocognitive or functional morbidity at hospital discharge was higher among survivors with acute SARS-CoV-2 with versus without severe neurological manifestations (27.7 versus 14.6 percent); similar findings were seen for patients with MIS-C (28.0 versus 15.5 percent).

The odds of having new neurocognitive and/or functional morbidity at hospital discharge were increased for patients with acute SARS-CoV-2 and those with MIS-C after adjustment for risk factors in those with severe neurological manifestations (odds ratios, 1.85 and 2.18, respectively).

"Future studies should aim to better understand the pathophysiology behind the severe neurological manifestations and to investigate the role

of surveillance, treatment, and follow-up of these patients with high risk of neurocognitive and/or functional morbidities," the authors write.

More information: Conall Francoeur et al, Severe Pediatric Neurological Manifestations With SARS-CoV-2 or MIS-C Hospitalization and New Morbidity, *JAMA Network Open* (2024). DOI: 10.1001/jamanetworkopen.2024.14122

Michael S. Wolf, Severe Neurological Sequelae in Pediatric Patients with SARS-CoV-2 or MIS-C, *JAMA Network Open* (2024). DOI: 10.1001/jamanetworkopen.2024.14127