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SCIENTIFIC LETTER

Spontaneously Resolving Encephalitis in Children with Acute COVID Infection

Manon Casabianca[1] · Julia Roux[2] · Stephane Auvin[3] · Luigi Titomanlio[1] · Kumaran Deiva[2] · Léa Lenglart[1]

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To the Editor: Since the SARS-CoV-2 outbreak, the proportion of infected children has increased [1]. The symptoms of COVID-19 in children are usually mild or nonexistent [2]. However, the increase in pediatric cases has raised attention to rare forms of COVID-19 that could not be highlighted previously [3].

We describe three consecutive cases of spontaneously resolving encephalitis during SARS-CoV-2 infection in December 2021 in Paris, France. All cases (median age: 11 y) were febrile and not vaccinated against SARS-CoV-2. Consciousness and behavioral disorders appeared between 1 and 13 d after the SARS-CoV-2 diagnosis. None of the patients presented the clinical signs of MIS-C. Cerebrospinal fluid (CSF) cellularity was normal, and CSF culture, FilmArrayME panel as well as autoimmune encephalitis-related autoantibodies* were negative. Brain MRIs were normal and EEG showed typical signs of encephalitis in 2 cases. EEG was not performed in 1 because of spontaneous recovery (EEG was unavailable over the weekend). No immune treatments were administered, and patients had normal neurological examinations at discharge (median length of stay: 7 d) and at the 2-mo follow-up.

Acute consciousness/behavioral disorder associated with normal CSF and brain imaging during the acute phase of a SARS-CoV-2 infection was neither consistent with the previously described COVID-19 encephalitis nor with symptoms of multisystem inflammatory syndrome in children (MIS-C). To date, studies presenting neurological manifestations of COVID-19 in children have described more severe cases (abnormal MRI and neurologic sequelae at discharge) [3]. Moreover, the quick recovery and negative investigations apart from the EEG suggest a transient neuroimmune disorder. This presentation is possibly part of the neurological spectrum of SARS-CoV-2 in children, with still unidentified mechanisms. Although symptoms at the onset are worrying, all patients had a spontaneous, favorable outcome. Thus, when dealing with a febrile child with an acute alteration of consciousness during a SARS-CoV-2 infection, therapeutic abstention can be discussed if lumbar puncture and the MRI are normal.

*anti-NMDA, CASPR2, Lgi1, AMPAR, GABA, anti-Hu, Yo, Ri, CV2, amphiphysin, Ma2 and Sox1.

Declarations

Conflict of Interest None.

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Manon Casabianca, Julia Roux, Kumaran Deiva and Lea Lenglart contributed equally to this work.

✉ Léa Lenglart
lea.lenglart@gmail.com

[1] Department of Pediatric Emergency Care, Assistance Publique - Hôpitaux de Paris, Hôpital Robert Debré, 48 Boulevard Sérurier, 75019 Paris, France

[2] Department of Pediatric Neurology, Assistance Publique - Hôpitaux de Paris, Bicêtre Hospital, Le Kremlin Bicêtre, France

[3] Department of Pediatric Neurology, Assistance Publique - Hôpitaux de Paris, Hôpital Robert Debré, Paris, France