

# NEUROLOGICAL MANIFESTATIONS ASSOCIATED WITH SARS-COV-2 INFECTION IN CHILDREN

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**Introduction** Neurological manifestations are found in more than 1/3 of cases of SARS-Cov-2 infection. Actually acute epileptic seizures and Epileptic Status (SE) in children currently demonstrate a high mortality rate ( between 5% and 39%) in combination and post-infection with SARS-CoV-2.

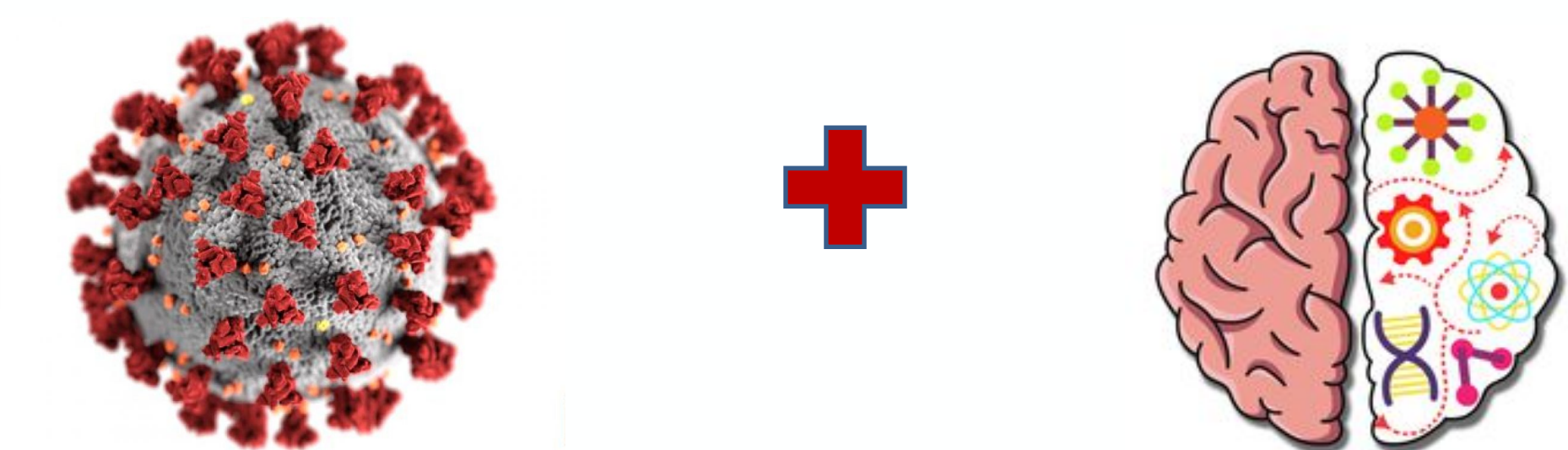
**Keywords** Epilepsy, Status epilepticus, SARS-CoV-2 infection, Covid-19.

**Purpose** To estimate the prevalence of the association of neurological manifestations, including acute seizures and status epilepticus (SE) after infection with Covid-19 in children.

**Material and methods** Prospective study was conducted on a group of 47 children with age reference from 6 months to 10 years, who were hospitalized in the Neurology Department and IMSP Mother and Child Institute and selected according to the association of neurological symptoms especially those who associated SE during and after infection with Covid-19. Examinations: EEG, imaging. The SPSS program was used for statistical analysis.

**Results** Within this group of children neurological recurrences during and post-SARS-CoV-2 was as follows: 30 (63,8%) represented in-hospital onset, whereas 12 (25.5%) had outpatient onset, and 5 (10.6%) presented with unclear onset. Neurological symptoms consistent with SE was diagnosed in (31.2%), whereas other frequently reported symptoms were hypo/anosmia (11.7%) , encephalopathies (9.3%), stroke(5.6%), hyperkinesia (5.6%), irritability (27.8%), cognitive impairment (22.2%), and asthenia(18.7%). EEG findings and imaging data correlated with cerebral distress ( $r = 0.62$ ), ( $r = 0.78$ ), respectively. No significant difference was noticed between the recurrence of in-hospital ( $p > 0.01$ ) and out-of-hospital SE ( $p > 0.02$ ).

## Neurological Implication of Covid-19



1. Direct damage to receptors
2. Cytokine-related injury
3. Secondary hypoxia
4. Retrograde travel along nerve fibers

## PREVALENCE NEUROLOGICAL MANIFESTATION



**Conclusions** Although a possible association between SE and Covid-19 has been reported, the neuroinvasive and neurotropic properties of SARS-CoV-2 are insufficiently elucidated. The cytokine storm and hyperactivation of immune cells lead to secondary dysfunction in CNS with subsequent occurrence of neurological sequelae.