



Omicron variant of SARS-CoV-2 is more likely to cause febrile seizures and unconsciousness in children than non-Omicron variants | 1

The authors from Japan conducted this study to determine whether SARS-CoV-2 variants differ in their impact on the occurrence of simple or complex febrile seizures in infected children. The results showed that the Omicron variant of SARS-CoV-2 was associated with a higher rate of febrile seizures and unconsciousness in infected children than the non-Omicron variants.

Febrile seizures or convulsions occur in young children. The majority of febrile seizures occur in children between the 12 and 18 months of age. They are triggered by a fever above 38.3 degrees Celsius (101 degrees Fahrenheit). Febrile seizures can occur as a result of the fever that accompanies bacterial or viral infections, or as a side effect of certain vaccines.



About the study

The study comprised 214 children who were infected with the SARS-CoV-2 non-Omicron variants and 557 children who were infected with the SARS-CoV-2 Omicron variant. Children aged 0-15 years were diagnosed with coronavirus disease (COVID-19) by SARS-CoV-2 PCR test or antigen test and were hospitalized for COVID-19 from January 2020 to October 2022. The children in the Omicron group were significantly younger, with a mean age of 5.3 ± 4.4 years, whereas in the non-Omicron group the mean age was 6.1 ± 4.7 years.

The data were extracted from the medical records and included age, date of arrival at hospital, sex, and various clinical symptoms, including seizures and disorders of consciousness. The seizures were categorized as the follows: if the seizure occurred once and stopped within five minutes, it was categorized as simple febrile seizure. A seizure that occurred more than twice within a 24 h-period was categorized as complex seizures, whereas prolonged seizures that occurred at the hospital were categorized as status epilepticus.



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The results

The rate of simple or complex febrile seizure occurrence was significantly different between the two groups. One of 133 febrile participants in the non-Omicron group, and 92 of 534 febrile participants in the Omicron group, had simple or complex febrile seizures. In the group of 92 children diagnosed with SARS-CoV-2 Omicron variant who had febrile seizures, 49% were diagnosed with simple febrile seizures, 25% with complex febrile seizures, 11% with status epilepticus, and 2% with encephalopathy.

These results indicate that SARS-CoV-2 Omicron variant is more likely to cause seizures and unconsciousness in children than the non-Omicron variants. The authors suggested that further research involving more institutions and larger sample sizes is necessary, given the fact that this study sample was derived from a single institution.

This study was published in *Frontiers in Pediatrics*.

Journal Reference

Tokuyama K, Kitamura T, Maruyama K, et al. High number of seizures and unconsciousness in patients with SARSCoV-2 Omicron variants: a retrospective study. *Front. Pediatr.* 2023; 11:1273464. (Open Access).

<https://www.frontiersin.org/articles/10.3389/fped.2023.1273464/full>

[DiscoverMedNews](#) has already reported that SARS-CoV-2 variants have different effects on the brain cells and the blood-brain barrier.

<https://discovermednews.com/sars-cov-2-variants-affect-brain-cells-differently/>