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Predicting onset and remission of infantile spasms by pairing clinical signs and a disease biomarker CSF-GABA

Stephenson W Nkinin
University of Cincinnati, USA

Background: Infantile spasms (IS) is a severe form of epilepsy that occurs in the first year of life. It is characterized by brief, repetitive, spasms of the face, arms, and legs, often accompanied by a characteristic EEG pattern. The pathogenesis of IS is unclear, but it is thought to be related to abnormal excitability of the developing brain. GABAergic neurotransmission is thought to play a role in the pathogenesis of IS. We have previously shown that CSF GABA levels are elevated in IS patients. In this study, we investigated the relationship between CSF GABA levels and clinical signs of IS.

Methods: We analyzed CSF GABA levels in 16 IS patients and 12 age-matched controls. CSF GABA levels were measured using a sensitive and specific method. Clinical signs of IS were recorded.

Results: CSF GABA levels were significantly higher in IS patients compared to controls ($P=3.44 \times 10^{-12}$). CSF GABA levels were also significantly higher in IS patients with clinical signs of IS compared to IS patients without clinical signs of IS ($P=0.0001$).

Conclusion: CSF GABA levels are elevated in IS patients and are associated with clinical signs of IS. CSF GABA levels may be a useful biomarker for predicting onset and remission of IS.

Biography

Stephenson W Nkinin is an Adjunct Professor of Microbiology at the University of Cincinnati Department of Biology. He is currently pursuing his MPH (Epidemiology) in the department of Environmental Health, University of Cincinnati. Prior to registering in the MPH program, He was a Research Associate Scientist at the Pathology/Clinical Mass Spectrometry Department at Cincinnati Children's Hospital.

nkininw@mail.uc.edu

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