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Epilepsy and COVID-19: Tactics of Treatment

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Abstract

Coronavirus disease 2019 (COVID-19) is an infectious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). SARS-CoV-2 is a single-stranded zooanthroponous RNA virus belonging to the genus Betacoronavirus to the subgenus Sarbecovirus. There are 3 strains: A, B, and C. The virus primarily spreads between people through close contact and via respiratory droplets produced from coughs or sneezes. It mainly enters human cells by binding to the receptor angiotensin converting enzyme 2 (ACE2). SARS-CoV-2 may also cause respiratory failure through affecting the brainstem as other coronaviruses have been found to invade the central nervous system (CNS). While virus has been detected in cerebrospinal fluid of autopsies, the exact mechanism by which it invades the CNS remains unclear and may first involve invasion of peripheral nerves given the low levels of ACE2 in the brain. One of the brain diseases is the epilepsy. During treatment, the compatibility of epilepsy drugs and COVID-19 should be taken into account (Figure 1). In some cases, the co-use of AEDs and antiviral and antibacterial preparations may lead to and exacerbate adverse events such as cardiotoxicity and hepatotoxicity, and in some cases, when using benzodiazepine-type preparations, the appearance or aggravation of already existing respiratory disorders. The interactions between AEDs and COVID-19 drugs must also be considered. It is also necessary to consider the interaction of AEDs and drugs for the treatment of COVID-19, which affect cardiac conduction, QT interval, etc. The enzyme inducing AEDs can induce many drugs to treat COVID-19, and in turn these drugs can enhance the elimination of AEDs, which can provoke an increase and/or resumption of seizures. Drug-drug interactions and adverse drug reactions of AEDs and anti-COVID-19 therapies could pose significant therapeutic challenges. Therefore, it is important to consider any and all adverse effects and drug interactions in patients with epilepsy, who become infected with SARS-CoV2 and need treatment for COVID-19.

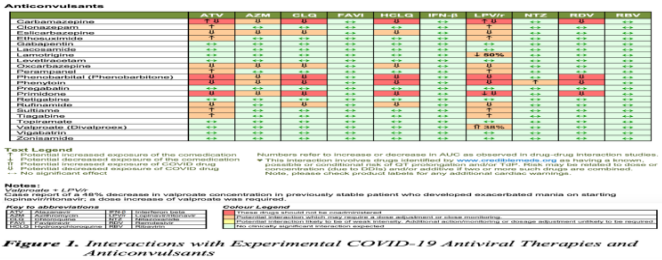


Figure 1. Interactions with Experimental COVID-19 Antiviral Therapies and Anticonvulsants

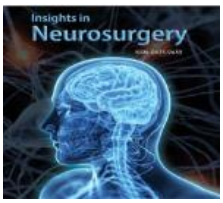
Biography:

Anna Voitiuk has graduated from Kharkiv National Medical University in 2013 with major in General Medicine. From 2013 till 2015 she studied as a Postgraduate student in Neurology at Kharkiv Medical Academy of Postgraduate Education. During her residency she has shown interest and enthusiasm in treating patients with disorder of cerebral circulation, epilepsy etc. She studied at the EAN Spring School and got a certificate about finishing in 2017. She also studies the features of the EEG and EEG-video-monitoring. She has got a second education in V. N. Karazin Kharkiv National University with major Philology with honours in 2018. Currently she is a qualified Neurologist. She is an active participant in case report discussions and always ready to suggest original solutions. She takes active part in scientific conferences, for example, in Washington, New Orleans, Vienna, Barcelona, Rome, Madrid etc. She has scientific publications in different journals.

Speaker Publications:

1. Voitiuk A, Litovchenko T. A. “Assessment of the Quality of Lifeof Young Men Suffering From Epilepsy”; J Psychiatry Depress Anxiety. 2019/ 5: 018.
2. Voitiuk A, Litovchenko T. “The Problem of Cognitive Impairments in Young Men with Epilepsy”. Ann Med & Surg Case Rep: AMSCR-1000015. 2019.
3. Voitiuk A, Litovchenko T, Markova T. “Non-Epileptic Paroxysmal States in Epilepsy”. J Neurol Neurosci. 2020/ 11: 5: 330.

6th International Conference on Epilepsy & Treatment; Webinar- September 21-22, 2020.



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