



Pandemic-Triggered Aberrant Drug Use may Cause Failure of Antiepileptic Therapy

Pandemi Kaynaklı Uygunsuz İlaç Kullanımı Antiepileptik Tedavi Başarısızlığına Neden Olabilir

Manolya Bergüzar Şekerlisoy¹, Aslıhan Taşkiran Sağ²

¹TOBB University of Economics and Technology Faculty of Medicine, Medical Student, Ankara, Turkey

²TOBB University of Economics and Technology Faculty of Medicine, Department of Neurology, Ankara, Turkey

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Dear Editor,

The severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) pandemic has caused much damage to the lives of people worldwide. Pandemics are robust situations that can be evaluated from a sociopsychological perspective. The current pandemic has caused some changes in people's behavioral patterns, one of which is their drug-taking behavior. Although the medications used for the treatment of coronavirus disease-2019 are at the forefront of these, there are also changes in the daily drug use patterns of people. The increased use of uncontrolled herbal products and vitamins, which are believed to strengthen the immune system, poses possible risks. An uncontrolled intake of these substances, which were rarely found in our lives before, becomes a risk for unpredictable drug-drug interactions. In addition, paracetamol, an antipyretic agent, has become a tool for many people to avoid pandemic restrictions. Here, we present a case of possible drug interactions due to pandemic-triggered aberrant antipyretic consumption.

A 31-year-old male presented to the emergency department 45 min after an episode of seizure. He was diagnosed with focal epilepsy and was under a regular antiepileptic therapy. His physical examination revealed hematoma on the right zygoma. Blood test results were within the normal ranges. Brain computed tomography was performed, and any hemorrhagic lesions were ruled out. Neurology consultation was requested.

During the neurological evaluation, the patient reported that his seizures occurred every 2-3 years. He was taking lamotrigine 2×150 mg and levetiracetam 1×500 mg regularly. The convulsion he had that day was unusually severe compared to his former seizures. His neurological examination was unremarkable, and a routine electroencephalography revealed a mild epileptiform abnormality characterized by paroxysmal generalized slow and sharp-slow waves (4-6 Hz) and sharp-slow waves on left temporal electrodes that occurred once for 5 s. Upon further questioning, the patient stated that he was abroad for 10 days before the day of seizure. Because of the pandemic, he was afraid of not coming back to his country and acknowledged that he took one tablet of paracetamol 500 mg each day so that he would not have fever until he passed the airport control.

Lamotrigine has pharmacokinetic interactions with substances like acetaminophen and paracetamol; antituberculosis agents, such as rifampicin, isoniazid, and ethambutol; and aripiprazole, atazanavir/ritonavir, atorvastatin, fluoxetine, lithium, lopinavir/ritonavir, olanzapine, combined oral contraceptives, orlistat, sertraline, and quetiapine (1). Some studies also reported a ≤20% reduction in lamotrigine steady-state level due to recurrent paracetamol ingestion (2). Glucuronosyltransferases use both lamotrigine and paracetamol as substrates (3,4). Although the exact cause of this situation is unsure, the induction of lamotrigine metabolism by paracetamol seems to be a likely mechanism that underlies this seizure recurrence (5). Valuable information

Address for Correspondence/Yazışma Adresi: Manolya Bergüzar Şekerlisoy MD, TOBB University of Economics and Technology Faculty of Medicine, Medical Student, Ankara, Turkey Phone: +90 530 048 32 77 E-mail: bm.sekerlisoy@gmail.com ORCID: orcid.org/0000-0002-7547-7765

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might have been provided by therapeutic drug level monitoring, which was not accessible for our patient. This may allow a better evaluation of the connection of pharmacokinetic variations with the failure of antiepileptic therapy.

As seen in this case, the only health problem brought by the pandemic is not just the epidemic itself. If it were not for the pandemic conditions, this patient would not have taken paracetamol for 10 days, and he would probably not have had this significant seizure. This case shows us that the interaction of antiepileptic drugs with other drugs must be well-researched and reported to patients. Unusual behaviors due to the pandemic must also be carefully investigated against possible health risks. Since drug interactions are a massive problem for patients who use drugs regularly, necessary studies about the interactions of medications used in the pandemic must be conducted.

Ethics

Informed Consent: Informed consent was obtained

Peer-review: Internally peer-reviewed.

Authorship Contributions

Design: M.B.Ş., A.T.S., Data Collection or Processing: M.B.Ş., A.T.S., Literature Search: M.B.Ş., A.T.S., Writing: M.B.Ş., A.T.S.

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