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Impact of COVID-19 on Seizure and Dementia of the Epileptic Patients

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Abstract

Pandemic coronavirus diseases 2019 (COVID-19) had affected multi-organs of the sufferers. Epileptic patients have been among the much vulnerable populace during this crisis period. This article demonstrates the case reports of two epileptic patients. Impact of COVID-19 on epileptic seizures along with memory and learning related behavioral complications of those to epileptics have been reported in this case study.

Keywords: ***COVID-19; SARS CoV-2; Behavioral alteration; Memory; and Learning.***

1. Introduction

Coronavirus diseases 2019 (COVID-19), caused by the severe acute respiratory syndrome virus serotype 2 (SARS CoV-2) had caused a heavy toll globally [1]-[2]. Though most of the COVID-19 patients have suffered and died of respiratory complications, nervous system-oriented symptoms of COVID-19 patients are not scarce [3]. In this aspect, focus has been paid to the epileptic patients during COVID-19 crisis. Along with seizures, the main symptoms of the epileptics, memory and learning related behavioral aspects of the epileptics have been studied and reported in the present article.

2. Case Report

The patient is a 25 years old, unmarried, male living in an apartment in Dhaka, the capital city of Bangladesh. He was a pre-term baby and diagnosed with epileptic seizures at the second year of his birth. He had been treated with anti-epileptic drug carbamazepine (tegretol) for the last 15 years. Previously, he had frequent seizures. For the last five years, his seizure rate has been lowered. Now a days, he develops seizures usually once or two in a month but the day he develops seizures he suffers from this problem several times a day. Seizure lasts for about 5 minutes. Thus, if he

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develops seizures in the morning, his family members remain waiting for some other episodes of seizure on the same day for several times.

This patient possesses excellent working and reference memory. He can perform errands and identify relatives and friends. His memory and learning abilities seem remaining normal. During COVID-19, he had some extra seizures. As COVID-19 crises have been lifting, so has been observed in his seizure rate. May be there remains some intricate links between respiratory, neuro-biochemical and epileptic situation of this patient.

3. Case Report 2

This patient is 28 years old, unmarried male living in Dhaka. He was normal in physique and psyche. Suddenly, he suffered from fever and was hospitalized. In the hospital, he had been newly infected with septicemia and went in coma. His physical condition deteriorated and was in life support. After 10 days, his condition developed and but was diagnosed with de novo epileptic seizures. He could recall his own name, parents' and siblings' names but had some form of amnesia. His recent memory lapsed. He could remember his past memorable events that dated back about 5-10 or more years. But he failed to remember the events that took place one or two year ago. This situation persisted during COVID-19. He had been continuing carbamazepine (tegretol) for the last five years. His seizure condition has been improved but not fully removed.

4. Evaluation of the Two Cases

COVID-19 had affected multi organs of the sufferers, especially the respiratory and nervous system. Though, direct correlation between COVID-19 and epilepsy had not been established, there seems some intricate interlinkings. Public health related meta data would answer the underlying cause and effects. Also, molecular biological aspects would discern these features much well. Thus, further careful study on these multidisciplinary aspects should be promoted.

5. Conclusion

Epileptic complications along with memory and learning related behavioral problems should be addressed during the COVID-19 epidemics. Probable links and integrated treatment and management strategies would aid the global humanity highly. Thus, appropriate measures should be taken soon.

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