Triggering Factors for Breakthrough Seizures among Epileptic Patients. Cross Sectional Study in Epileptic Patients Attending Epilepsy Clinic Mansoura University Hospital, Egypt

Mohammed Gomaa*, Ahmed Esmael and Mohammed Saad

1Department of Neurology, Faculty of Medicine, Mansoura University, Egypt.

Authors' contributions

This study was completed in cooperation among all authors. Author AE structured the work, performed the statistical analysis, composed the protocol and the principal draft of the original copy. Authors MG and MS dealt with the analyses of the study and approved the final research.

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ABSTRACT

Background: The prevalence of breakthrough seizures in persons with epilepsy is very high in developing countries. Consequently, patients and physicians should be aware of the possible factors that may cause breakthrough seizures.

Objective: The aim of our study is to determine the possible factors that may be a precipitating cause for breakthrough seizures in patients with epilepsy.

Methods: This cross-sectional study included 100 persons with epilepsy with idiopathic epilepsy receiving antiepileptic drugs (AEDs). They were divided into two groups. Group 1 included 50 persons with epilepsy with a history of recent breakthrough seizures. Group 2 included 50 persons with epilepsy who had not experienced any recent breakthrough seizures. Patients were subjected to a thorough questionnaire addressing precipitating factors. All participants were subjected to an electroencephalogram (EEG) and the Morisky Medication Adherence Scale (MMAS).

Results: There was no significant differences between group 1 and group 2 regarding age, sex, age of onset of epilepsy, occupation and marital status (P value range 0.5 – 0.2). The patients in group 1 were found to have longer durations of epilepsy, lower adherence to AEDs (P = 0.001), more
missed doses of AEDs ($P = 0.0001$), more side effects of AEDs ($P = 0.0005$), more sleep deprivation, lower level of AEDs ($P = 0.0006$), more frequently on AED polytherapy ($P = 0.0002$), and more flickering lights ($P = 0.04$) than the participants in group 2. In terms of the EEG, group 1 showed a higher percentage of abnormal EEGs and more frequent focal epileptiform discharges ($P = 0.003$). Also, pathological findings in MRI brain were associated with higher breakthrough seizures ($P = 0.005$). No significant difference was found in both group 1 and group 2 regarding emotional stress ($P = 0.55$), substitution of brand AEDs by generic one ($P = 0.83$), concurrent illness ($P = 1$), or the use of non AEDs ($P = 0.79$).

**Conclusion:** The precipitating factors of breakthrough seizures are multifactorial and it is very important to educate patients about these precipitating factors to achieve better control of epilepsy.