Effects of Antiepileptic Drugs on Electroencephalographic Findings in Patients with Idiopathic Generalized Epilepsy

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Abstract

Objective: Several antiepileptic drugs (AEDs) such as phenobarbital (Pb), carbamazepine (CBZ), and valproate (VPA) may suppress interictal epileptiform activity. We investigated the effects of AEDs on electroencephalography (EEG) data from patients with idiopathic generalized epilepsy (IGE).

Materials & Methods: In this cross-sectional study, all patients electroclinically diagnosed with IGE were recruited in the outpatient epilepsy clinic at Shiraz University of Medical Sciences from September 2008 through August 2010. A routine EEG was requested at the time of referral for all patients. Statistical analyses were performed using Chi square and Fisher’s exact test.

Results: This study comprised of 336 patients. For about 20.8% (70 patients) of them, the initial EEG appeared normal. The first EEG was normal in 14.2% of the patients who had newly diagnosed IGE (19 patients). Normal EEG was also detected for 27.6% of the patients who received VPA monotherapy (16 patients), 31% of the patients who received CBZ monotherapy (9 patients), 29.4% of the patients who received Pb monotherapy (5 patients), and 11.1% of the patients who received lamotrigine (LTG) (1 patient).

Conclusion: This study shows that compared to LTG, VPA suppresses generalized interictal epileptiform activity in patients with IGE more effectively. Theoretically, if a drug can frequently induce normalization of EEG, then it may be a better drug for treating IGES.