

The Relationship of Interictal Epileptic Discharges with Duration of Illness in Epileptic Patients

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Abstract

- Background** Epileptic discharges generally initiated at specific locations and spread after time in preferred directions along specific pathways, this spread will simultaneously change the dynamics of system in which it spread and cause epileptic destabilization of neuronal circuits.
- Objectives** To study the relationship between single focal epileptic discharge or multiple focal epileptic discharges and the duration of their disease.
- Methods** Ninety six epileptic patients with partial epilepsy and mean age of 12.5 ± 7.5 years were studied, no one of patients receive antiepileptic drugs or were on irregular treatment. They had been divided according to duration of illness into two groups; those with more than one year illness and those with less than one year illness. Electroencephalography recording were obtained via 10-20 system using bipolar and referential montage with a thirty minutes record for each patient, accordingly. Patients were divided into those with single focal epileptic discharge (unifocal) & those with multifocal (multiple focal) epileptic discharge.
- Results** A significant difference in mean duration of illness between patients with unifocal and multifocal epileptic discharge were found. Those with multifocal epileptic discharge show higher mean duration of illness (17.8 ± 9.05) months as compared to those with unifocal epileptic discharge (9.1 ± 6) months. Significant positive linear correlation was found ($P = 0.01$), and the duration of illness increased more in patients with multifocal epileptic discharge.
- Conclusion** We found that longer duration of exposure to epileptic discharge could lead to generation of new foci not exist previously and that may possibly be due to kindling phenomena and triggering more spread of epileptic discharge.
- Key words** Epileptic discharge, Kindling phenomena, electroencephalography.

List of Abbreviation: AEDs = Antiepileptic drugs, EEG = Electroencephalography, ED = Epileptic discharge, MRI = Magnetic resonance imaging, CNS = central nervous system.

Introduction

Brain regions vary considerably in their capacity to participate in different forms of epileptic activities. Epileptic discharges generally initiated at specific locations and spread after time in preferred directions along specific pathways⁽¹⁾. In human as well as in

experimental animals, cortical epilepsy can begin with abnormal activity at seizure focus followed by synchronization and subsequent spread through the cortex⁽²⁾.

The process of spread of epileptic discharges in central nervous system (CNS) can occur as a propagation of signals in neuronal network or as a process of dynamic changes in neuronal circuits and nets⁽³⁾. As the spatial extent of the neuronal population involved in seizures is