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**Abnormal Electroencephalography in First Unprovoked Seizure in Rajavithi Hospital**

Petcharat Dusitanond

Abstract

**Background:** Electroencephalography (EEG) has an important role in epilepsy diagnosis, classification of epilepsy syndrome, lesion localization, and prediction of seizure recurrence, but no study of EEG in the first unprovoked seizure had been carried out in Rajavithi Hospital prior to the current one.

**Objective:** The present research aimed to find the prevalence of abnormal EEG in the first unprovoked seizure and the prevalence of abnormal EEG in partial seizure and generalized seizure.

**Material and Method:** This was a retrospective study of 28 adult patients who presented with first unprovoked seizure. EEG was performed in all patients and baseline characteristics were recorded.

**Results:** Of the 28 patients with first unprovoked seizure, abnormal EEG was found in 16 patients (57.41%). 95%CI of the prevalence of abnormal EEG was 37.60-76.68%. EEG abnormalities were found in 7 patients (46.7%) who had partial seizure, and 8 patients (53.3%) who had generalized seizure. Eight patients (28.6%) had epileptiform discharges. The patients who were taking medication for underlying diseases and patients with abnormal neurological examinations were associated with a statistically significant higher risk of EEG abnormality (OR 6.43, 95%CI 1.05-39.33, p = 0.044, and OR 13.2, 95%CI 1.24-140.68, p = 0.027, respectively).

**Conclusion:** Abnormal EEG was detected in more than half of the patients with first unprovoked seizure, which is comparable to previous studies. EEG should be considered for all patients with first unprovoked seizure.

**Keywords:** Abnormal electroencephalography, First unprovoked seizure

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**The Medical Association of Thailand**

Address: 4th Floor, Royal Golden Jubilee Building, 2 Soi Soonvijai, New Petchburi Road, Bangkok 10310, Thailand

Telephone: 0-2716-6102, 0-2716-6962 press 0 Fax: 0-2314-6305

E-mail: [jmedassocthai@yahoo.com](mailto:jmedassocthai@yahoo.com), [math@loxinfo.co.th](mailto:math@loxinfo.co.th) 