

Incidence, mortality, and predictors of status epilepticus in Malaysian Emergency Departments

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ABSTRACT

Introduction: Status epilepticus (SE) is a neurological emergency requiring prompt management to reduce mortality and improve patient outcomes. This study aimed to determine the incidence, mortality risk, and predictors of SE among epilepsy patients presented to the emergency department (ED). **Materials and Methods:** This prospective, multicentre study was conducted from November 2024 to June 2025 across 23 hospitals in Malaysia. We included adult epilepsy patients on maintenance antiepileptic drugs (AEDs) who presented with seizures, while excluding first-onset and non-epileptic seizures. Convenience sampling was used. The primary endpoints were the incidence of SE and in-hospital all-cause mortality. Logistic regression was performed to identify predictors of SE. **Results:** A total of 262 patients were recruited, predominantly male (n=157, 59.9%) with an unknown epilepsy aetiology (n=129, 49.2%). SE occurred in 24.4% (n=64) of patients. The rates of intubation and mortality were 13.7% (n=36) and 3.1% (n=8), respectively. SE was positively associated with both intubation (p<0.001) and mortality (p<0.001). The study identified non-adherence to AEDs (aOR 2.055, 95% CI 1.119-3.772, p=0.020) and infection (aOR 2.339, 95% CI 1.223-4.474, p=0.010) as significant predictors of SE. In contrast, stress was negatively associated with SE (aOR 0.096, 95% CI 0.013-0.725, p=0.023). **Conclusion:** This study confirms a high incidence of SE among epilepsy patients presenting in the ED, which is significantly associated with increased mortality. Our findings underscore the critical importance of patient education on medication adherence and the timely management of intercurrent infections to improve outcomes for this high-risk population. The unexpected negative association with stress warrants further investigation.

Keywords: Status Epilepticus, Emergency Department, Medication Adherence, Antiepileptics, Seizure