

# Management of Breakthrough Seizure and Status Epilepticus in the Emergency Department: A Prospective, Observational, Multicentre Study



**BEAT'EM** (Management of **B**reakthrough **sE**izure and **sT**atus epilepticus in the **EM**ergency Department)

No 156



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## 1. BACKGROUND

- Managing breakthrough seizures (BS) and status epilepticus (SE) in the ED is challenging due to patient heterogeneity & limited access to medical records.
- Suboptimal management may lead to prolonged seizures, permanent neurological damage, & mortality.
- Locally, data on acute seizure management in the ED is limited.

## 2. OBJECTIVE

- To evaluate the quality of acute seizure management in the ED, focusing on adherence to antiepileptic drug (AED) selection, escalation and dosing, the role of emergency medicine (EM) pharmacists, and factors associated with in-hospital mortality.

## 3. METHODS

- Prospective, Multicentre, Observational Study
- Adult epilepsy patients on AEDs presenting with seizures
- First-onset & non-epileptic seizure
- 22 public hospitals in Malaysia
- Nov. 2024 – March 2025
- Sampling method** – Convenience
- Primary endpoints**
  - Adherence to AED selection & escalation as per local guidelines
  - Types of pharmacist interventions and their acceptance
  - All cause in-hospital mortality.

## 4. RESULTS

### Demographics

N=206

AGE: 42.5±16.6

59.7% Male

### Top 2 Aetiologies

- Structural: 87 (42.2%)
- Genetic: 82 (39.8%)

### Treatment

SE: 23.3%

Acute treatment: 106 (51.5%)

Phenytoin Loading: 77 (37.4%)

Diazepam: 58 (28.2%)

### Adherence to local guidelines

- AED selection: **99.5%**
- AED escalation: **99.5%**
- AED dosing: **93.2%**

**74** interventions in EM pharmacists patients

**100% Acceptance**

- TDM AED – 43.2%
- AED selection & initiation – 29.7%
- Dose adjustments – 18.9%

Intubated: 11.2%

Admitted: 71.8%

Discharge ED: 28.2%

**3 (1.5%)** Status Epilepticus (p=0.011)

## 5. DISCUSSION

- This study offers insights into real-world seizure management within Malaysian EDs, highlighting the high adherence to local treatment guidelines, mortality risk of SE, & the role of EM pharmacists.

## 6. CONCLUSION

- This study highlights high adherence to local guidelines in the management of acute seizures in EDs.
- The mortality risk associated with SE underscores the importance of early identification of risk factors and comprehensive, protocol-driven management.
- Strengthening the role of EM pharmacists may further support more efficient emergency care delivery.

**Keywords:** Seizure, status epilepticus, emergency, ED, EM pharmacist



### References

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