Epilepsy as a Medical Emergency: improving urgent & emergency care

Ian Wilmer
Advanced Paramedic Practitioner (Critical Care)

Patients’ Forum - October 2018

*The opinions expressed here are my own, and not necessarily those of the LAS
Epilepsy as a medical emergency

- Types of Convulsion
- First Aid
- Prolonged convulsions
- Psychogenic Non-Epileptic Seizures
- LAS treatment
- Conclusions
- The future?
Types

- **Convulsion, seizure, fit** (all the same)
- Epileptic convulsion (generalised, focal, absence)
- Patient with epilepsy (‘epileptic’?)
- Provoked convulsion
- Prolonged convulsions (CSE)
- Psychogenic Non-Epileptic Seizure (PNES)
- **Syncope** (faint or cardiac)
- **Eclampsia** (during/after pregnancy)
Types

- Epileptic convulsion
  - A seizure caused by sudden, excessive, disorderly electrical discharge of groups of brain cells
  - Not necessarily caused by epilepsy
- A patient with epilepsy
  - A chronic disorder characterised by a lowered epileptic seizure threshold
Types

- Provoked convulsion
  - **Epileptic** seizures caused by irritation of the brain
  - e.g. Head injury, stroke, alcohol, hypoglycaemia, drug overdose, infection
Types

• Generalised
  • A generalised convulsion involving both sides of the brain
  • Generalised stiffening muscle spasm (tonic), and then rhythmic jerking of the limbs (clonic)
• Bilateral Tonic-Clonic Seizure (BTCS)
Types

- Absence
  - Generalised, awareness suddenly lost, pt blank or unresponsive
- Focal
  - Limited to one side of the brain
  - Variable consciousness
First Aid

- Generalised: usually short
  - Under 90 seconds, self limiting, slow recovery
- Protect from harm
  - Clear area, padding, **nothing** in mouth
- Allow it to resolve
- Call 999 if:
  - 1\textsuperscript{st} seizure, repeated, over 5 minutes, significant injury or still unconscious 10 minutes later
Prolonged convulsions: CSE

- Convulsive Status Epilepticus (CSE)
  - Seizures lasting longer than 5 mins or when seizures occur one after another with no recovery between
Prolonged convulsions: CSE

• During a seizure
  • Insufficient energy production = cell death

• Permanent brain damage or death: CSE
  • Morbidity overall = 3 - 15%
  • Mortality > 1 hr = 32%
CSE Complications

- Longer a seizure persists:
  - Less likely to respond to drugs
  - Higher chance death & long term disability
  - Delays in Tx >30 mins = poorer outcome
- SUDEP
- Fluid lungs
- Aspiration pneumonia
Psychogenic Non-Epileptic Seizures (PNES)

- Seizures not accompanied by abnormal electrical discharges in the brain
- Usually an involuntary psychological response to distress
- Associated with recent or historic emotional trauma
Psychogenic Non-Epileptic Seizures (PNES)

- Often misdiagnosed with EP (20-30%)
- Non-epileptic attack disorder, dissociative seizures, functional seizure, conversion disorder, pseudo-seizures
- 33% of PNES been in ITU
- 20% of prolonged seizures are PNES
- 50% of refractory seizures are PNES
Differentiation EP v PNES is key
- Sometimes challenging, not impossible
- Consistent v fluctuating
- Synchronised v not
- Response, eyes, verbal, type of movement
- If in doubt, treat for CSE
LAS treatment: Patient with Epilepsy

- Assessment
- Convulsion now stopped- ‘post ictal’
- Position
- Airway/O$_2$?
- If recovering- convey or not convey?
  - History, support, location, concerns
  - Are we conveying unnecessarily?
LAS treatment: CSE

- A,B,C, history, monitoring
- Position, airway, $O_2$
- Reversible causes? (e.g. blood sugar)
- **Medication** after 5 mins
- Remove to hospital ASAP
LAS treatment: CSE

• Medicines
  • Paramedics:
    • **Diazepam**- rectal or IV (2 doses)
    • LAS concerned re latest JRCALC PR dose
    • Patients own **Midazolam**- buccal (1-2 doses)
  • Advanced Paramedics (critical care):
    • **Midazolam**- buccal, IM, IV
  • Emergency Department:
    • Alternatives- Phenytoin, Keppra, anaesthetic
LAS treatment: PNES

- Psychogenic Non-Epileptic Seizures
  - Correct treatment:
    - Sympathy, no medicines (O₂ or others)
    - Family to video?
    - Treat as mental health problem
  - Issues:
    - No training on PNES
    - Misunderstood
    - NHS staff less than sympathetic?
LAS treatment: Focal

- Focal convulsions
  - Rare, paramedics may be uncertain
  - Child treatment, same as CSE
  - Adult treatment currently unclear
    - Draft new guidelines explicit
- APPs have clear guidance
  - APPs have clear guidance, and treat with midazolam
Conclusions

• Conveying too many recovered EP pts?
• Sub optimal care of PNES?
• LAS has not introduced national recommended dose of rectal diazepam?
• Paramedics don’t have IM midazolam in UK
• Unclear recommendations for focal convulsions in adults
The future?

• New national adult convulsion guideline out next year, may:
  • Include section on PNES
  • Include IM Midazolam for CSE
  • Include section on focal seizures in adults

• Longer term-
  • APPs- second line medications?
Epilepsy as a medical emergency