



Seizures and Epilepsy



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Definitions: clinical

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Definition of epilepsy by cause

Idiopathic

Symptomatic

- Drugs
- Alcohol
- BT
- CVA
- Infection

Cryptogenic

?

- What types of seizures do you know?

Classification of seizures

- Partial-onset seizures
 - Simple partial
 - Complex partial
 - Secondary generalised tonic-clonic
- Generalised-onset seizures
 - Typical absence
 - Atypical absence
 - Myoclonic
 - Atonic
 - Primary generalised tonic-clonic
 - Clonic
 - Tonic

Partial-onset seizures

- Commence at any age
- Usually have an aura which reflects seizure origin and initial spread
- Awareness may be retained (simple partial), partially preserved or lost (complex partial) and can be secondary generalised tonic-clonic
- Common patterns eg clustering

Generalised-onset seizures

- Childhood, adolescence, young adults
- No warning
- Abrupt loss of consciousness (except myoclonus)
- Occur in normal eg typical absence or diffusely abnormal brain eg tonic drop attacks
- Common pattern; soon after wakening

Diagnosis

- Before
- During - witness
- After

- Timing
- Time of day
- Clusters

Tonic-clonic seizures

- Can be primary or secondary generalised
- Distinction has implications for management

- In person presenting with tonic-clonic seizure(s) how would you distinguish between primary and secondary generalised?

Primary or secondary generalised?

	Primary generalised	Secondary generalised
Definite	Absences Myoclonus	Warning Other simple or complex partial seizures
More likely	< 25 years No warning Wakening	Sleep

Video

Differential diagnosis

- Faint
- Cardiac syncope
- NEAD, Non epileptic attack disorder

- True hypoglycaemia, not related to obvious diabetic px, is rare

Investigations

- Bloods
- ECG

- MRI, to find a structural cause
- EEG, to classify
- ECG
 - Depends on history
 - < 25 EEG + ? MRI
 - > 25 MRI

Treatment

- Partial Lamotrigine, Carbamazepine
- Generalised Valproate, Levetiracetam
 - Topiramate
 - Clobazam
 - Zonisamide, pregabalin, phenytoin, phenobarbitone, tiagabine

Surgery

- Temporal lobectomy
 - Mesangial-temporal sclerosis
 - 65% cure
 - 30% improve
 - 5% worse
 - 1 in 200 die

Remission

- Defined as 2 years, **but** drive after 1 year
- When to come off depends on:
 - Time since last seizure
 - EEG result
 - Response to 1 drug
 - Type of seizure
- Cant drive, for time to come off medication + 6 months

Womens' issues

- Contraception
- Pre-conception
 - MMR 1% Val 6%, Carb 2%, Lam 3% (? More), dose dependant
 - FVS not dose dependant
- Pregnancy
- Menopause

Levels and bloods

- Generally do NOT do them, except....
 - To check compliance
 - Side effects/toxicity on two drugs and you don't know which
 - Phenytoin with it's unusual pharmacokinetics
 - Valproate assay is useless
 - Phenytoin - fbc

What to refer

- 1st event(s) ? Seizures ? Epilepsy
- Uncontrolled seizures in established cases
- Remission
- Drug issues such as side effects
- Original diagnostic doubt
- Counselling re contraception, conception ®
- Rectal diazepam to buccal midazolam ®

And finally

- **Include previous correspondence and investigations**
- Consider whether referral is appropriate for the service, we can assess anyone, but those with clearly complex epilepsy, who have been under significant secondary care before, might be better referred there.
- We are not an annual review service for QOF



Senarios

1. Nightclub girl

- Witness description, during, nature of 'fit'
- History from patient, before and after
- Duration loc,
- Drugs, alcohol
- PMH, previous events

- Likely diagnosis – syncope

- Driving: syncope 4 weeks, unexplained 6 weeks, seizure 12 months

2. Lay preacher

- MRI
- ECG
- Event recorder
- Tilt test

- Night attack perhaps implies seizure, lam/carb
- Pacemaker

3. A&E attender

- Sound like seizures from history
 - Possibility of NEAD, alcohol, drugs
 - Accurate history, headache, neuro exam
 - Needs MRI
-
- Glioma, often benign and low grade, not radiosensitive, ave survival 10-15 years

4. Executive

- Single event (?)
- Accurate history inc alcohol and drugs

- MRI
- DVLA – 12 months
- Stop drinking

- No px (MESS study), no px for alcohol induced if continue to drink

5. Rugby player

- Was there a head injury, if not then single seizure
- 'Concussive seizure', not epilepsy, ix and follow up normal
- Significant head injury usually involves LOC, skull fracture, admission

6. Not good in the morning

- Diagnosis IGE or JME
- Needs EEG, probably not MRI
- Myoclonus, split cornflake

- Valproate
- Lamotrigine
- Levetiracetam
- DVLA
- Pregnancy, contraception

7. New Years Day

- MRI
- ? Single event but may be recurrence, any other events
- Alcohol
- Driving 12/12

- Lamotrigine, carbamazepine – rash 1 in 30, tiredness, dizzy (SANAD)

8. Fertility

- Polycystic ovary syndrome
- Valproate makes you put on weight

- USS, gynae opinion

- ? Lamotrigine, or topiramate
- ? Withdrawal ? EEG result

- Folate 5mg

9. Period trouble

- CPS + 2GTC
- Clobazam, levetiracetam
- Surgery

10. Remission

- SPS + 2GTC
- MRC tables
- Partial less likely to go into remission
- ? Driver, time to come off medication plus 6 months

11. Attack in clinic

- NEAD
- Seizures can be psychologically based and not physical, these attacks are real, but do not need medication, refer psychology
- Admit telemetry