Fits

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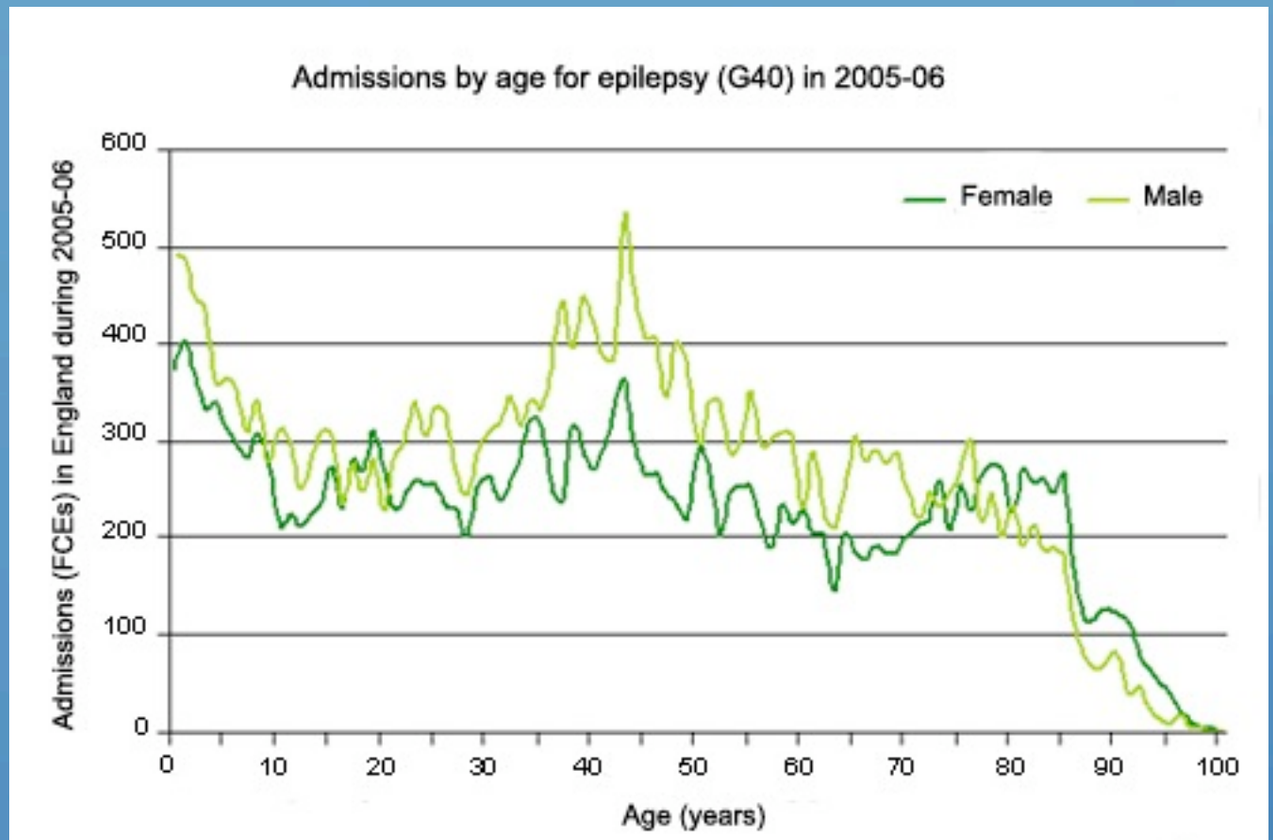
Introduction

- Sudden change in cortical electrical activity, with motor, sensory or behavioural changes, with or without an alteration in level of consciousness
- Family history ↑risk 3 fold
- Common presentation to ED, 196 ‘Convulsion ? cause’ Sep 07-08 at NMGH alone



- Epilepsy effects 1:30 in UK-86% via A&E[DoH2007]

History of Epilepsy

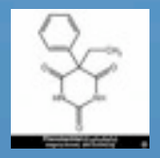
2000BC: Babylonian tablets describing different types of seizures

400BC: Hippocrates recognised it as a disease, not a devine affliction

70AD: Mark 9:14-29 an evil spirit is cast out of an epileptic by Jesus

1494: 200 000 women killed ‘witches’ (Malleus Maleficarum’s book)

1859-1906: start of the modern epilepsy era



1912: Phenobarbital invented

1929: EEG, Hans Berger

1968: Epilepsy Foundation formed

Types of seizures

- **Generalised** (no features referable to only one hemisphere)
  - Absence (<10s pause)
  - Tonic-clonic (tightening then classic jerking)
  - Myoclonic jerk (thrown to ground, or arm suddenly thrown)
  - Atonic (flaccid, drop)
- **Partial** (features referable to a part of one hemisphere)
  - Simple (no LOC)

    Temporal Lobe Aura then
    - Somatosensory and special sensory phenomena
      - Olfactory and gustatory illusions and hallucinations.
      - Auditory hallucinations consist of a buzzing sound, a voice or voices, or muffling of ambient sounds..
      - Patients may report distortions of shape, size, and distance of objects.
      - Things may appear shrunken (micropsia) or larger (macropsia) than usual.
      - Tilting of structures has been reported. Vertigo has been described with seizures in the posterior superior temporal gyrus.
    - Psychic phenomena
      - Patients may have a feeling of déjà vu or jamais vu, a sense of familiarity or unfamiliarity, respectively.
      - Patients may experience depersonalization (ie, feeling of detachment from oneself) or derealization (ie, surroundings appear unreal).
      - Fear or anxiety usually is associated with seizures arising from the amygdala. Sometimes, the fear is strong, described as an "impending sense of doom."
      - Patients may describe a sense of dissociation or autoscopy, in which they report seeing their own body from outside.
    - Autonomic phenomena are characterized by changes in heart rate, piloerection, and sweating.

    Jacksonian (starts peripherally and involves greater area, type of TLE),
  - Complex (impaired consciousness, usually automatisms)

Causes

Causes

- Epilepsy
- SOL-tumours, subdurals
- Infective-meningitis, abscesses, encephalitis, syphilis, cysticercosis
- Endocrine-↑/↓ glucose
- Electrolytes-eg ↑/↓Na^{+}, ↓Ca^{++}, uraemia
- Febrile in <5yrs
- CVA, SAH, vascular malformations
- Hypoxia
- Alcohol withdrawal
- SLE, PAN
- Drugs eg tricyclic OD
- Malignant hypertension
- Pseudosiezures

History

History

- Details of event, aura, triggers, movements, tongue biting, incontinence, drowsiness afterwards
- Head trauma recently/previous head injury
- Fevers, neck stiffness, rashes, foreign travel
- Headaches esp. morning, visual problems, focal signs
- Medications (anti-epileptics)/drug use, alcohol intake
- Medical problems eg DM, hypo's
- Previous fits

Examination

Examination

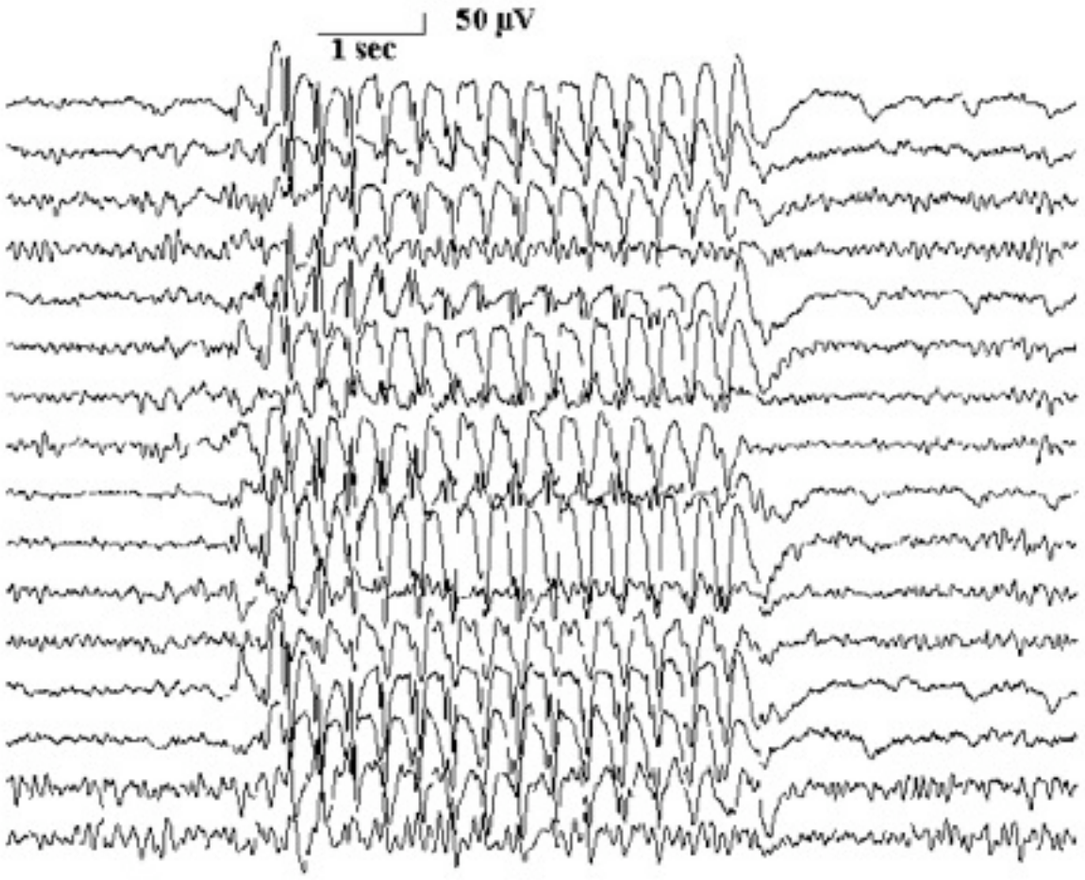
- Treat ABCDE first and stop fits
- Detailed neurological examination, including cranial nerves and fundoscopy for papilloedema
- General look, temperature, rashes, neck stiffness, Kernigs
- BM, $Sp0_2$

Investigations

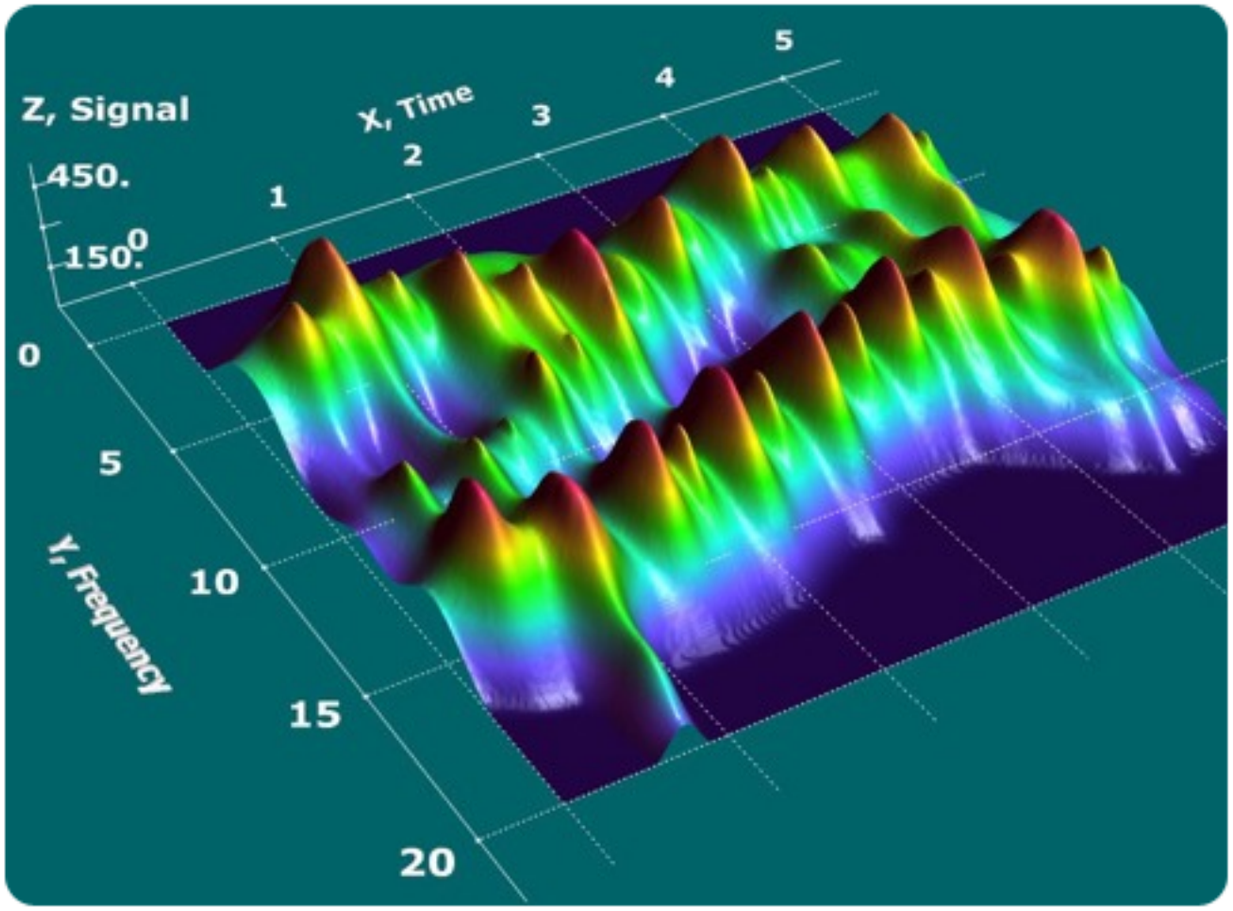
Investigations

- Look for cause, FBC, U&E, Ca^{2+}/PO_4, BM, blood cultures if fever, INR
- Urine/blood toxins
- CXR to check for aspiration IF being admitted
- CT scan: trauma or signs of SOL, SAH or altered sensorium, focal signs
- MRI if worsening with normal CT
- LP if infective cause likely
- EEG (not ED);

EEG



3Hz spike & wave with ABSENCE seizures



3D EEG

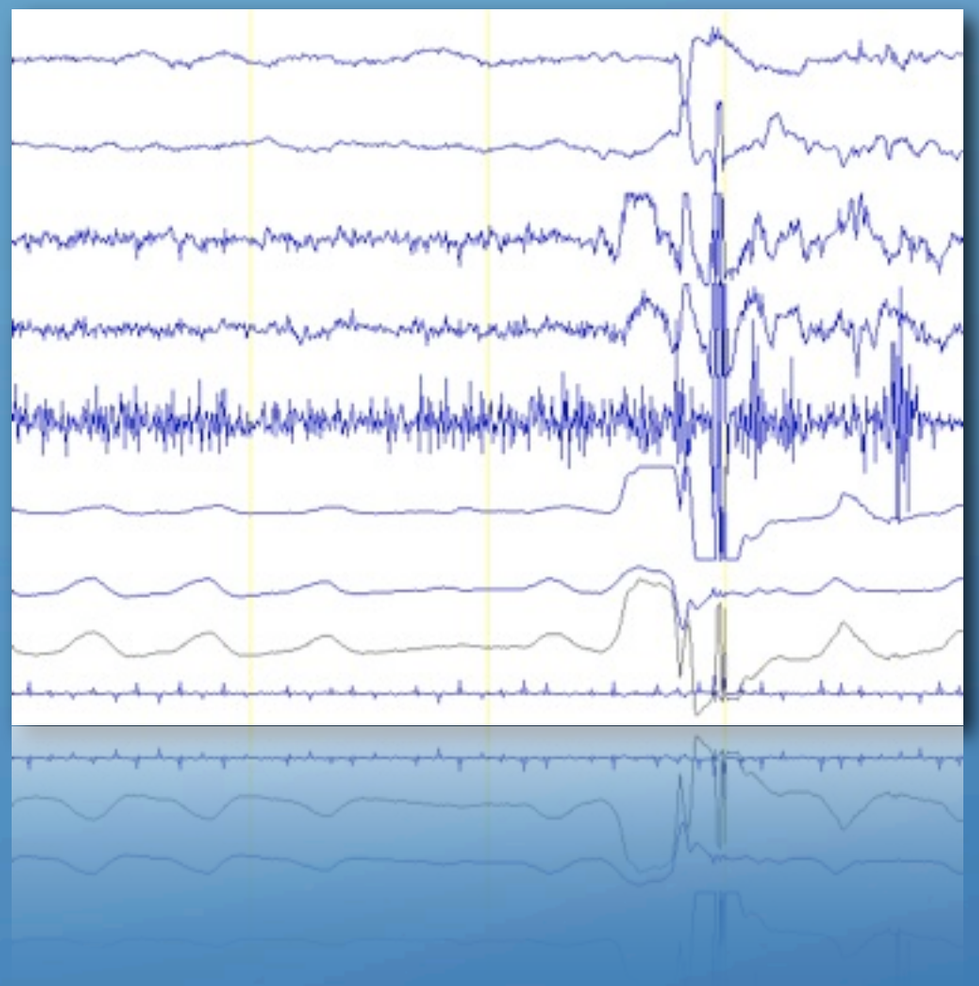
Treatment

Treatment

- Stop acute fitting
- Bring temperature down in febrile fits
- First fits need admission for investigation or follow up in ‘First Fit Clinic’
- Admit all febrile first fits
- If known epilepsy ensure full recovery and home unless multiple, recent or defaulted treatment. Don’t need any Ix routinely.
- If previous febrile fits ? home (well, >2yrs, fever source found)
- Anti-epileptics if >1 but not normally from ED

Status Epilepticus

- >30 minutes fitting continuously or episodic without recovery
- Life threatening emergency, [cardiac arrest, renal failure, hyperthermia, aspiration pneumonia, underlying pathology or the treatment instituted (16-25% adults, 3-19% paeds)]
- Priority is ABC, stopping the fitting and finding cause
- Cause varies with age



Treatment of Status

- in Paediatrics

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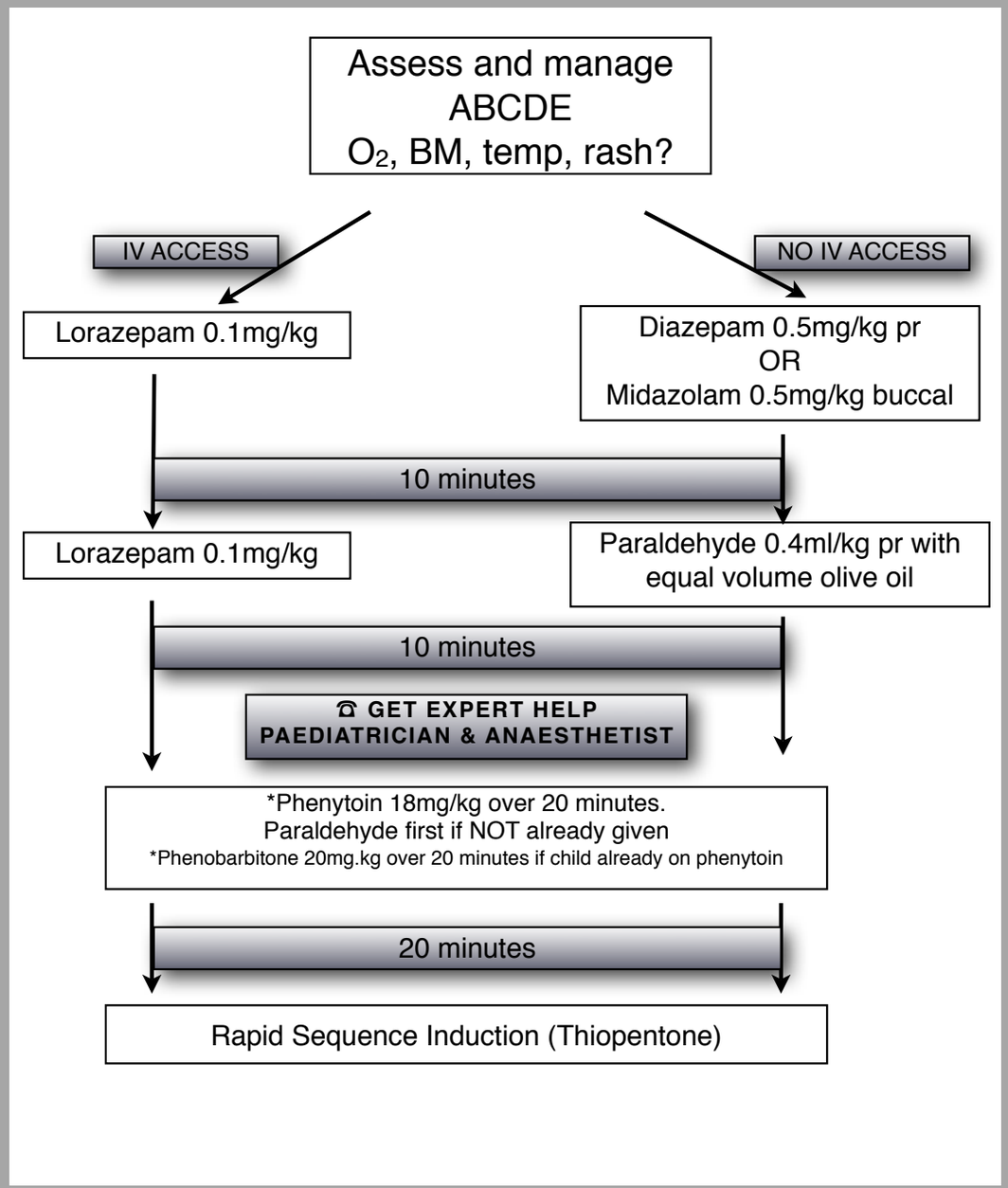

Treatment of Status

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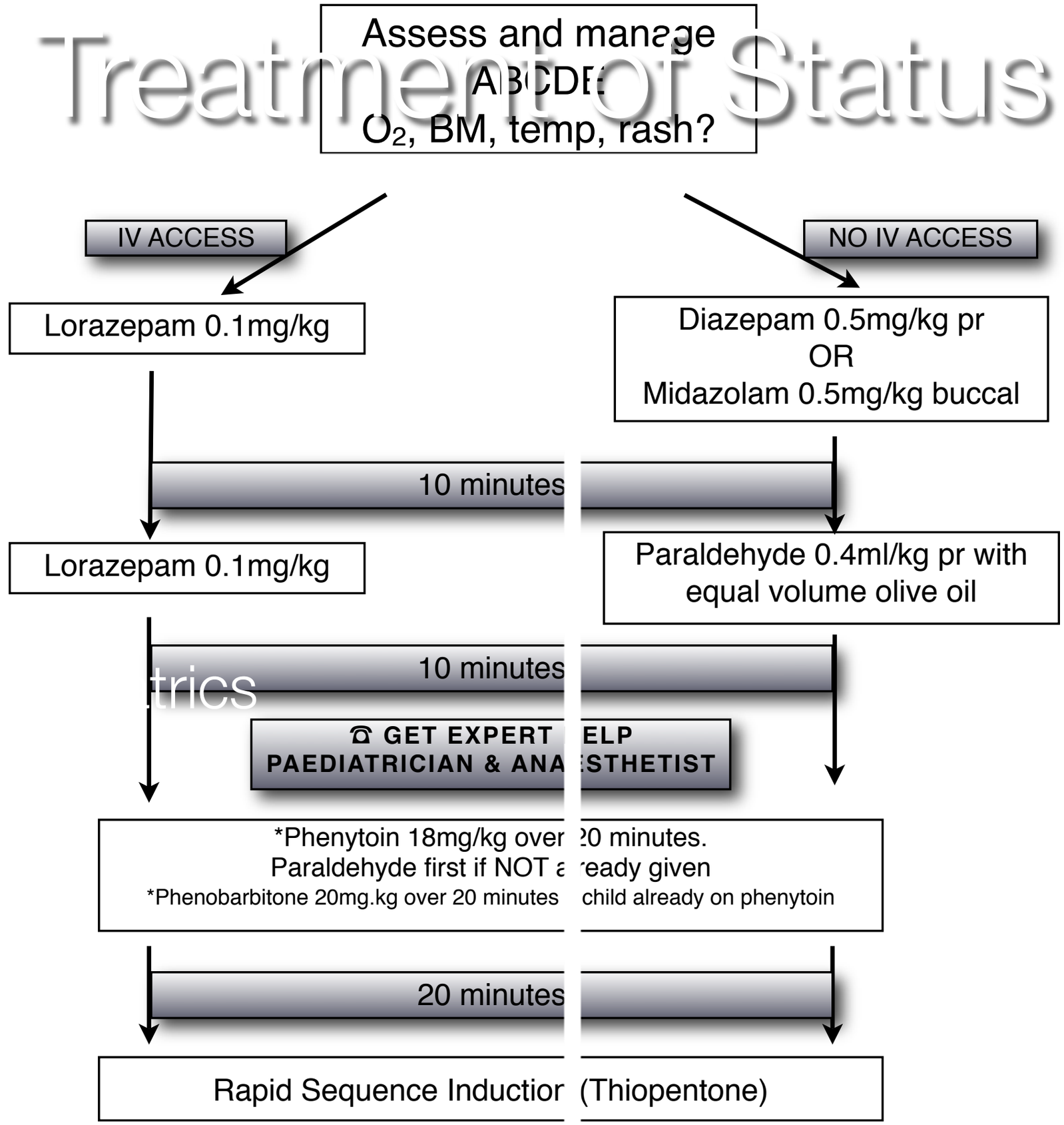

Assess and manage
ABCDE
O_2, BM, temp, rash?

IV ACCESS

Lorazepam 0.1mg/kg

10 minutes

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10 minutes

NO IV ACCESS

Diazepam 0.5mg/kg pr
OR
Midazolam 0.5mg/kg buccal

10 minutes

Paraldehyde 0.4ml/kg pr with equal volume olive oil

10 minutes

☎ GET EXPERT HELP
PAEDIATRICIAN & ANAESTHETIST

*Phenytoin 18mg/kg over 20 minutes.
Paraldehyde first if NOT already given
*Phenobarbitone 20mg.kg over 20 minutes if child already on phenytoin

20 minutes

Rapid Sequence Induction (Thiopentone)

Adults

- Nurse on side, O2, suction then IV access
- NIL immediately, if not stopped in a few minutes give diazemuls 10mg iv/lorazepam 4mg iv
- Similar approach to paediatrics, benzodiazepine then phenytoin, then RSI with Thiopental
- Beware pseudo-seizures.

Advice

- First fit patients MUST be told not to drive and to inform the DVLA. **Document** this advice in the notes.
- If patients refuse, explain their legal responsibilities, if still won't -inform pt and tell their GP
- Advise about not climbing ladders, bathing alone, swimming alone etc

Advice

NEUROLOGICAL DISORDERS	GROUP 1 ENTITLEMENT ODL - CAR, M/CYCLE	GROUP 2 ENTITLEMENT VOC – LGV/PCV
EPILEPSY Epileptic attacks are the most frequent medical cause of collapse at the wheel. **NB**: If within a 24 hour period, more than one epileptic attack occurs, these are treated as a "single event", for the purpose of applying the epilepsy regulations. Epilepsy includes all events, major, minor and auras.	**The Epilepsy Regulations Apply**. Provided a licence holder/applicant is able to satisfy the regulations, a 3-year licence will be normally issued. Till 70 restored if seizure free for 7 years with medication if necessary in the absence of any other disqualifying condition. (**See Appendix to this Chapter for full regulation**)	Regulations require a driver to remain free of epileptic attacks for at least 10 years without anticonvulsant medication in that time.
FIRST EPILEPTIC SEIZURE/SOLITARY FIT Also see under: 1) Fits associated with misuse of alcohol or misuse of drugs whether prescribed or illicit. 2) Neurosurgical conditions.	**One year off driving with medical review before restarting driving**. Till 70 restored provided no further attack and otherwise well. (Special consideration may be given when the epileptic attack is associated with certain clearly identified non-recurring **provoking cause.**)	Following a first unprovoked seizure, drivers must demonstrate 10 years freedom from further seizures, without anticonvulsant medication in that time. 1) Following a solitary seizure associated with either alcohol or substance misuse or prescribed medication, a 5 year period free of further seizures, without anticonvulsant medication in that time, is required. If there are recurrent seizures, the epilepsy regulations apply.


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