CHILDHOOD EPILEPSY

Make your management fit each child

Do not call children with epilepsy “Known Epileptics”. Classify the epilepsy properly, find a cause if there is one, look for neurodevelopmental sequelae and associated problems, and tailor your management according to your comprehensive assessment.

Decide what kind of epilepsy the child has, i.e. CLASSIFY the seizure disorder

This requires a detailed description of the seizure, which should be documented at first presentation

Generalised (non-focal origin)
Clinical features suggest involvement of both hemispheres
- Tonic-clonic (grand-mal)
- Tonic
- Clonic
- Absence (petit mal)
- Atonic (minor motor)
- Myoclonic

Partial (focal origin)
Clinical features suggest an origin in a discrete (unilateral) brain area

Simple (consciousness not impaired)
- Motor
- Sensory
- Autonomic
- Psychic
- Mixed

Complex (Consciousness Impaired)
- Simple partial followed by loss of consciousness

Unclassifiable
- Some are not easy to classify, and their character may change as the child (the brain) grows older

Exclude conditions that resemble epilepsy
A careful history will distinguish the following from true seizures:

Oculogyric crises
- Due to phenothiazine toxicity (relatively common)

Breath-holding attacks
- age 6 months - 4 years
- brought on by anger or sudden fright
- always preceded by crying
- there may be loss of consciousness and even jerking movements

Vasovagal responses
- response to pain or fright
- in older children (usually school-going)
- falls to ground
- short-lived
- may be slight twitching
- no drowsiness or amnesia after the attack

Hypnogogic jerks (“slaaprukke”)
- one or more sudden limb jerks when falling asleep
- distinguish these from myoclonic seizures occurring in children under 2 years, usually with severe associated neurological problems

Night terrors
- child awakes showing intense confusion, agitation and apparent fear
- inconsolable for some minutes
- then goes back to sleep
- cannot remember the event in the morning

Cardiac arrhythmias
- similar to vaso-vagal episodes

Hysterical seizures
- a conversion disorder

Determine the cause
See guideline: “The Fitting Child”

Check for presence of associated problems

- Learning disorders
- Behaviour problems
- Mental handicap
- Physical handicap
- Developmental delay / regression
- Cerebral Palsy
- Syndromes

Decide on long-term medication

When to start anticonvulsants?
- Long-term treatment should not be started lightly, as anticonvulsants have significant side effects, and the collection and administration of medication can be very disruptive for patients and family
- Start anticonvulsant therapy if there are more than 2 non-febrile seizures within a period of months
What anticonvulsant?

**Generalised seizures**

Clinical features suggest involvement of both hemispheres at ONSET

### Tonic-clonic (grand mal)

<table>
<thead>
<tr>
<th>Description</th>
<th>Treatment</th>
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<tbody>
<tr>
<td>Bilateral jerking movements</td>
<td>PHENOBARBITONE 5-10 mg/kg 24H nocte, maximum oral maintenance dose is 120 mg. Review in 1 month for the development of hyperactivity. If present, change to CARBAMAZEPINE 2mg/kg 8H increasing to 5-10mg/kg 8H if needed</td>
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### Absence attacks (petit mal)

<table>
<thead>
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<tbody>
<tr>
<td>An abrupt cessation of activity +/- rapid blinking lasting +/- 10 seconds with amnesia. EEG has characteristic 3 Hz spike and wave pattern.</td>
<td>SODIUM VALPROATE 5mg/kg (to max 20mg/kg) 8-12H</td>
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### Myoclonic

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<td>Bilaterally symmetrical muscle contractions often without a change in consciousness</td>
<td>SODIUM VALPROATE 5mg/kg (to max 20mg/kg) 8-12H OR CLONAZEPAM 0.05-0.3 mg/kg/day in 3 doses</td>
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### Partial seizures

#### Simple (no alteration of consciousness)

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<td>CARBAMAZEPINE 2mg/kg 8H increasing to 5-10mg/kg 8H if needed</td>
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#### Complex (alteration of consciousness)

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<tr>
<td>PHENOBARBITONE (5-10 mg/kg/day nocte). If hyperactivity develops or there is poor seizure control, change to CARBAMAZEPINE 2mg/kg 8H increasing to 5-10mg/kg 8H if needed</td>
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### Atonic (the drop attack)

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<tr>
<td>A sudden and complete loss of tone in limb, neck and trunk muscles with loss of consciousness but also with rapid return to full consciousness post-ictally</td>
<td>SODIUM VALPROATE 5mg/kg (to max 20mg/kg) 8-12H OR CLONAZEPAM (1drop=0.1mg) 0.01mg/kg 12H - 0.053 mg/kg 6H (max 2mg)</td>
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### Akinesic

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<tr>
<td>A sudden cessation of movement without significant loss of tone</td>
<td>SODIUM VALPROATE 5mg/kg (to max 20mg/kg) 8-12H OR CLONAZEPAM 0.05-0.3 mg/kg/day in 3 doses</td>
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### Febrile

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<tr>
<td>None</td>
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### Unclassifiable

If it is not possible to categorise the seizure disorder into the above classification, then try at least to determine whether it is generalised or partial and refer to a paediatrician. Subspecialist referral may be necessary.

#### How to manage anticonvulsants?

- Aim for full control of the seizures with the fewest possible side-effects
- Use a single drug and slowly increase the dose until it is effective, or until side-effects become unacceptable. (the question: “are the side effects of the drug worse than the ‘side-effects’ of the illness?” is sometimes useful)
- If the drug is not effective, add a second drug and slowly withdraw the first; two drugs used together are seldom more effective than one

#### How long to continue anticonvulsants?

- Continue until fit-free for 2 years then wean gradually over a period of months
- Stopping too suddenly may precipitate seizures

#### If there is POOR CONTROL, after a period of good control

- Has the dose been “outgrown”? Is the dose being taken?
- If there is uncertainty about “1”, measure drug levels (remember to measure carbamazepine levels 6-8 hours after the last dose):
  - very low or absent levels suggest “non-compliance”
  - higher but sub-therapeutic levels suggest inadequate dose

#### Place for long term follow up

**Level 1**

Controlled seizures (for periodic review, if necessary, by a Paediatrician – Level 2)

**Level 3**

Poor control of fits (more than 2 fits in a period of months) on therapeutic doses of standard anticonvulsants

**Level 2**

- Standard anticonvulsants (used one at a time) are ineffective
- Loss of developmental milestones
- Doubt about the diagnosis