Status epilepticus – Emergency management in children – Flowchart

Child presents to ED with seizure for more than 5 minutes or repeated seizures without full recovery to normal conscious level between episodes

**Emergency Management ABCD**
- Support airway
- Provide oxygen via NRBM
- Support ventilation (BVM)
- Obtain IV access

Consider differential diagnoses (Box A)

2 doses of benzodiazepine prior to ED?

**Benzodiazepine ASAP**
- IV access: Midazolam (preferred) or Diazepam
- No IV access: Midazolam buccal/intranasal/IM

Check BGL
- IV Glucose 10% (2 mL/kg) if ≤2.6 mmol/L on VBG or iSTAT

Persistent seizure > 5 minutes?

**Repeat benzodiazepine to maximum of 2 doses**
- Airway management as needed

Persistent seizure > 5 minutes?

**Observation period to monitor for ongoing seizures and return to baseline status**
- Investigations as directed by assessment

Recurrence of seizures?

**Consider discharge on senior emergency/paediatrics advice**

Seizure > 5 mins after completion of 2nd-line agent?

**Administer second-line agents**
- Agents include:
  - Levetiracetam IV
  - Phenytoin IV (age more than 1 year)
  - Phenobarbitone IV (age less than 1 year)
  - Paraldehyde IM/PR (no IV access)

Check BGL
- IV Glucose 10% (2 mL/kg) if ≤2.6 mmol/L on VBG or iSTAT

Consider second-line agent while preparing for intubation

Seizure > 5 mins after completion of 2nd-line agent?

- Contact Paediatric Critical Care
- Anticipate intubation
- Seek Paediatric Neurology advice
- Consider administering alternative second-line agent while preparing for intubation

Persistent seizure > 5 mins?

**Observation period to monitor for ongoing seizures**
- Investigations as directed by assessment

**Refer to Paediatric Critical Care**

Recurrent seizures?

**Consider discharge on senior emergency/paediatrics advice**

**Recurrence of seizures?**

**Consider seeking senior emergency/paediatrics advice as per local practice**

**Seek special emergency/paediatrics advice as per local practice**

**Seek urgent paediatric critical care or paediatric neurology advice onsite or via Retrieval Services Queensland (RSQ) on 1300 799 127**
Status epilepticus – Emergency management in children – Medications

First-line agents

Midazolam dosing for the treatment of status epilepticus in children

<table>
<thead>
<tr>
<th>Administration</th>
<th>Dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buccal/intranasal</td>
<td>0.3 mg/kg (maximum 10 mg)</td>
</tr>
<tr>
<td>IV/ IO</td>
<td>0.15 mg/kg (maximum 10 mg)</td>
</tr>
<tr>
<td>IM</td>
<td>0.2 mg/kg (maximum 10 mg)</td>
</tr>
</tbody>
</table>

Side effects: Respiratory depression common, particularly with repeated dosing

Diazepam dosing for the treatment of status epilepticus in children

<table>
<thead>
<tr>
<th>Administration</th>
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</tr>
</thead>
<tbody>
<tr>
<td>IV/ IO</td>
<td>0.1-0.4 mg/kg (maximum 10 mg)</td>
</tr>
<tr>
<td>PR</td>
<td>0.3-0.5 mg/kg (maximum 20 mg)</td>
</tr>
</tbody>
</table>

Side effects: Respiratory depression common

ALERT – Diazepam should not be given via IM injection due to slow and erratic absorption.

Second-line agents

Phenytoin dosing for the treatment of status epilepticus in children

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>IV</td>
<td>20 mg/kg (maximum 1,500 mg) administered over a minimum of twenty minutes. Administer more slowly (over sixty minutes) if seizure activity has ceased. Do not exceed rate of 1 mg/kg/minute or 50 mg/minute. Do not administer with IV solutions containing glucose.</td>
</tr>
</tbody>
</table>

Side effects: Arrhythmias
Respiratory depression (less common than with Phenobarbitone)

Monitoring: Cardiac monitoring recommended during infusion period.

Levetiracetam dosing for the treatment of status epilepticus in children

<table>
<thead>
<tr>
<th>Administration</th>
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</tr>
</thead>
<tbody>
<tr>
<td>IV loading dose</td>
<td>40 mg/kg (maximum 2.5 g) infused over five minutes.</td>
</tr>
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</table>

Phenobarbitone dosing for the treatment of status epilepticus in children

<table>
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<th>Administration</th>
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</tr>
</thead>
<tbody>
<tr>
<td>IV</td>
<td>20 mg/kg (maximum 1 g) administered over a minimum of twenty minutes. Do not exceed rate of 1 mg/kg/minute to avoid respiratory and/or circulatory impairment.</td>
</tr>
</tbody>
</table>

Side effects: Respiratory depression (if given in combination with benzodiazepines)

Paraldehyde dosing for the treatment of status epilepticus in children

<table>
<thead>
<tr>
<th>Administration</th>
<th>Dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>PR</td>
<td>0.4 mL/kg 100% (0.8 mL/kg when mixed 1:1 in olive oil OR Sodium Chloride 0.9%)</td>
</tr>
<tr>
<td>IM</td>
<td>0.2 mL/kg (maximum 10 mL) as a single dose then 0.1 mL/kg/dose every four to six hours. Give no more than 5 mL at any one site</td>
</tr>
</tbody>
</table>

For more information refer to CHQ-GDL-60014 – Status epilepticus – Emergency management in children